# THE JOURNAL

OF THE

## *Michigan State Medical Society*

ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

### PERIODIC HEALTH EXAMINATIONS

Preventive medicine has grown out of clinical medicine in as much as it is through a study of disease and its treatment that prevention must come. The general practitioner, therefore, in the war of prevention occupies the first line trench. His work in this regard will be furthered by a periodic stock-taking of the physical condition of his clientele either before disease manifests itself or when it may be apprehended in its earliest stages. This can be accomplished only by periodic health examinations. The physician thus becomes a practitioner of private preventive medicine as distinguished from the function of boards of health.

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### WINTER SALAD *(Six Servings)*

| | Grams | Prot. | Fat | Carb. | Cal. |
|---|---|---|---|---|---|
| 2 teaspoons Knox Sparkling Gelatine | 4.5 | 4 | .. | .. | .. |
| ¼ cup cold water | .. | .. | .. | .. | .. |
| ½ cup hot water | .. | .. | .. | .. | .. |
| ½ teaspoon salt | .. | .. | .. | .. | .. |
| ¼ cup vinegar | .. | .. | .. | .. | .. |
| 1½ cups grated cheese | 150 | 43 | 54 | .. | .. |
| ½ cup chopped stuffed olives | 70 | 1 | 19 | 8 | .. |
| ½ cup chopped celery | 60 | 1 | .. | 2 | .. |
| ¼ cup chopped green pepper | 25 | .. | .. | 1 | .. |
| ⅛ cup cream, whipped | 75 | 2 | 30 | 2 | .. |
| Total | | 51 | 103 | 13 | 1183 |
| One serving | | 8.5 | 17 | 2 | 197 |

Soak gelatine in cold water. Bring hot water and salt to boil and dissolve gelatine in it. Add vinegar and set aside to chill. When nearly set, beat until frothy, fold in cheese, olives, celery, pepper and whipped cream. Turn into molds and chill until firm. Unmold on lettuce leaf and serve.

### SPANISH CREAM *(Six Servings)*

| | Grams | Prot. | Fat | Carb. | Cal. |
|---|---|---|---|---|---|
| 1 tablespoon Knox Sparkling Gelatine | 7 | 6 | .. | .. | .. |
| ¼ cup cold water | .. | .. | .. | .. | .. |
| 1 cup milk | 240 | 7 | 10 | 12 | .. |
| ¾ cup boiling water | .. | .. | .. | .. | .. |
| 2 eggs | 100 | 13 | 10.5 | .. | .. |
| 1½ teaspoons vanilla | .. | .. | .. | .. | .. |
| Few grains salt | .. | .. | .. | .. | .. |
| Total | | 26 | 20.5 | 12 | 336.5 |
| One serving | | 4 | 3 | 2 | 56 |

Soak gelatine in cold water five minutes. Heat water and milk over boiling water, add gelatine and stir until dissolved. Separate eggs and beat yolks until lemon colored. Stir gelatine mixture slowly into egg yolks. Return to stove and cook over boiling water until mixture begins to thicken. Remove from stove, add vanilla and salt and chill. Beat egg whites until stiff and fold into jelly when almost set. Mold and chill until firm.

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VOL. XXX DECEMBER, 1931 No. 12


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## ADDRESS AT THE 82ND ANNUAL OPENING EXERCISES OF THE MEDICAL SCHOOL, UNIVERSITY OF MICHIGAN*


CHARLES GODWIN JENNINGS, M.D., M.A.C.P.
DETROIT, MICHIGAN


Although Michigan is not my native State, or its University my Alma Mater, my interest in its medical school has been sincere and of long standing. Since the struggling days of Ford, Palmer, McLean, Frothingham, to this time of its educational and scientific eminence—the period of the achievements of Vaughan, Warthin and the present members of the faculty—I have been on friendly and intimate terms with its teachers. We have lived in neighborly rivalry for the advancement of medical education, with the University always a little in the lead.

Thirty-five years of medical teaching gave me a sympathetic knowledge of the aspirations and accomplishments of the student of medicine. He was an inspiration to me in those years and my interest in his future has never waned. I am, therefore, very grateful for this opportunity again to speak to a body of students about to take up and carry on the science, the art and the culture of medicine where it must be dropped by the men of my generation.

It is not given to many medical men to live an intensely active professional life of over half a century and it is still rarer for that half century to cover the period in which, as Osler has said, "more had been done to determine the true nature of disease

*This address was on the occasion of the conferring of the Honorary degree of Master of Arts on the Speaker. See editorial, page 959.

than in all the time that had passed since Hippocrates."

With such a background, I may be pardoned if I bring back a little of the past in order that I may compare the medical problems of my early professional years with those which face the young physician of today.

My medical studies began in 1875. At that time centuries of observation and experience by the masters of our art had built up a science of the clinical history of disease. The knowledge of the nature of disease was a superstructure built largely upon the faulty foundation of speculation.

From Harvey's discovery 250 years before, medicine had made but halting advances. Late in the 18th Century Auenbrugger and Laennec founded the art of physical diagnosis, and Jenner discovered vaccination, the guidepost that pointed to the modern science of immunology. Then a fallow half century passed until Morton in 1846 made the great gift of anesthesia to humanity. An unimportant generation followed, and then came Pasteur. "Before him Egyptian darkness; with his advent a light that brightens more and more as the years give us ever fuller knowledge" (Osler).

This was the dawn of modern medicine, and my college years saw its first streakings in the application of the researches of this great man into the cause of the fermentations, to the solution of the mystery of the ages, the etiology of the infections. Lister's brilliant young mind quickly grasped the relation of the principles of Pasteur's experiments to wound infection, and he gave antiseptic surgery to the world. It was my good fortune to witness the first demonstration in Michigan of the crude technic of those early efforts. Koch then amplified the discoveries and deductions of Pasteur and Lister. In 1878 he demonstrated the microbic origin of wound infection and evolved the epoch-making technic of bacterial culture and stain. Thus was born the science of bacteriology, and modern medicine begin its spectacular career.

Can my student friends picture the medical knowledge of this time? Bacteriology, which has demonstrated the etiology of over 80 per cent of human ills, and has given us specific control over many of them, was a conception without a name. Lister had made asepsis a hope, but every surgical operation still was a septic hazard. Materia medica harbored the crudities of the past centuries, and therapeutics was an empirical puzzle. The roentgen ray and radium were undreamed of. The function of the endocrine glands was a mystery. The clinical thermometer and the hypodermic syringe were innovations. The sphygmograph and the electrocardiograph were unknown. The clinical laboratory did not exist and the microscope was a rare, glass-covered mantel ornament.

It is not difficult to see the problems which faced the young practitioner of that time, confronted as he was, by the oncoming revolution in medical science. The whole structure of medicine was in a state of flux, changing from year to year as experiment and research demonstrated with bewildering rapidity the scientific marvels that are the commonplaces of today.

His major problems were scientific. Research, experiment, discovery, technical perfection in the laboratory; revolutionary adjustments to meet this flood of discovery in the practical field of clinical medicine and surgery. The preclinical teaching of his college years rapidly became obsolete and postgraduate studies of the scientific foundation of his art were imperative.

The medical profession then had no serious economic problem. The physician's place in the social structure was fixed and long established custom cheerfully gave to him an adequate reward for his service.

We may ask what manner of man was this who faced such problems? He was the general practitioner of medicine, the heir to the knowledge, the traditions and the culture of the illustrious physicians of the centuries. The most beloved writer of this period, Robert Louis Stevenson, whose invalid life brought him into intimate contact with many physicians of many countries, wrote thus of his virtues:

"There are men and classes of men that stand above the common herd: the soldier, the sailor not infrequently, the artist rarely, rarelier still the clergyman, the physician almost as a rule.

"He is the flower of our civilization, and when that stage of man is done with, only to be marvelled at in history, he will be thought to have shared but little in the defects of the period, and to have most notably exhibited the virtues of the race.

"Generosity he has, such as is possible only to those who practice an art; discretion tested by a hundred secrets; tact tried in a thousand embarrass-

ments, and, what are more important, Herculean cheerfulness and courage.

"So it is that he brings air and cheer into the sick room and often enough, though not so often as he desires, brings healing."

How grateful we should be for such an appreciation! But I often wonder, are we medical men of today, tainted, perhaps, as we may be by the commercial spirit of the age, wholly worthy of this remarkable tribute?

Such, in briefest outline, was the medicine of fifty years ago; such was its exponent; such were his problems.

It is unnecessary before this audience to attempt to outline the advance of modern medicine. No informed person will say that medicine has lagged in this half century of scientific achievement. It has eagerly grasped and quickly applied to its humane endeavor the discoveries of biology, chemistry and physics. No field of human activity has made greater contributions to civilization.

So often we hear it flippantly said "Doctors don't know very much." Whatever may be the limitation of the individual medical mind, the sum of medical knowledge is stupendous. No single intellect can comprehend it. It is true many gaps are as yet unfilled. Experiment, the guiding genius of modern science, sooner or later will reveal many more of the secrets of pathology. Some may remain forever hidden. Perhaps some unthought of revelation, as in atomic physics, may simplify the intricate problems of cellular physiology and throw a flood of light upon its many mysterious disorders.

With this vast fund of knowledge accessible to the medical graduate of today, what will be his problems? Looking broadly at the relation of medicine to society, the major problems now confronting the medical profession are economic. The scientific problem is in the background. Great medical schools, foundations, hospitals and clinics are organized and financed to carry on with research and discovery. The great question now pressing for solution is, how may the accumulated scientific knowledge of modern medicine be made available for the prevention and cure of the ills of the mass of our people. In our eager efforts for the advancement of medical science we have neglected to build up an efficient organization for its practical application.

No one familiar with current literature can fail to see that the medical profession is under fire. In recent years a flood of criticism of medical service has poured out from books, from magazines, from the newspaper press. Some of this criticism is uninformed and unjust, but the candid physician must acknowledge that our critics have laid bare some of our grave sins of omission.

The two principal causes of complaint are, (1) the mounting cost of medical care, and (2), increasing and unregulated specialism. Granting for the moment the soundness of these strictures, where is the fault? It lies partly with the medical profession, partly with the community and partly with circumstances and conditions over which neither the physician nor the patient has control.

In this short address consideration of these questions must be fragmentary and general.

The increased cost of medical care is the direct result of the advancement of medical science. Time-consuming clinical investigation with costly diagnostic and therapeutic procedures has become essential to the modern practice of medicine and surgery. The patient very properly demands this service. To the wealthy or to the charity patient the cost matters little. To 80 per cent of our people, those of moderate means who do not ask for charity, it is a serious, personal, economic problem. Industrially expressed, the cost of production of modern medical service, a necessity of life, is more than the average consumer can pay.

Critics from various fields of industry and finance have roundly berated medical men for their failure to adjust their science to economic necessity. The recent collapse in the whole industrial and financial world has shown that it, too, has been unable to adjust its economics to its scientific advancement. The sting is taken out of this criticism of medicine.

For several years medical organizations, hospitals, and lay groups have been studying medical economics. The privately financed "Committee on the Cost of Medical Care" is completing the fourth, of a five year study. Interesting facts have come to light. It is shown that of the three items of the cost of medical care—hospital, nurse, physician—the physician costs the least.

The Baker Memorial, the middle rate unit of the Massachusetts General Hospital, was established for the care of patients of moderate means. It admits no charity cases or patients able to pay the rates of Phillips House, the private room unit. Of the total income of the first year of operation, in round figures, 62 per cent was paid for operation and maintenance, including the regular nursing staff, 10 per cent to special nurses, and 28 per cent to physicians and surgeons. There was a deficit on operation of 17 per cent of the total cost.

A manufacturing company in central New York, with plants in five neighboring cities, maintains a medical organization which gives complete medical service to its 15,000 workers and their families, a total of over 40,000 persons. In a recent year this service cost the company over $900,000.00. Of this sum, $360,000.00 was paid to hospitals, $305,000.00 to nurses, and $300,000.00 to the medical staff, including the fees of outside specialists.

These two examples, which well represent the cost of good medical care to persons of moderate means, show that physicians' fees make up less than one-third of the total. The doctors alone are not responsible for the increased cost of medical care.

Can this cost be reduced? By organization, concentration of equipment and grouping of professional effort, economies in operation may be made. Medical care, however, is a personal service. Luxuries may be eliminated, but necessities will still pile up a deficit between cost of production and ability to pay.

At the moment three agencies to meet this condition suggest themselves—philanthropy, health insurance, State aid. To a degree, these agencies are now in operation. Philanthropy is doing its noble work well. Health insurance is immature and must wait for greater actuarial experience. State aid, in the field of public preventive medicine, is functioning acceptably.

By well considered delimitation of the field of each of these agencies and by proper correlation of their activities, the problem of deficit may be met. Philanthropy would build the hospitals and endow their beds. Health insurance would permit the patient to contribute his quota and to maintain his independence. The State could amplify its present activities and take over the operation of medical centers, and the necessary clinical and X-ray laboratories.

A mystic streak still contaminates the human mind, cultivated or crude, and medicine seems to be a prolific field for its expression. The invalid seeks the miracle man and the miracle man of medicine at the present time is the specialist. In modern medicine specialism is a necessity. The public, however, has distorted its function and made it an expensive luxury. In large communities, at least, the doctor who is not a specialist in something or other is simply out of luck. Specialism, very properly, has come to stay, and our duty is so to regulate it that it will not be a burden to the sick and an embarrassment to medical practice.

In modern medicine the general practitioner of the old type is inadequate. Except in isolated communities he should not exist. His place should be taken by another, as yet unrecognized, specialist—the master of them all—the family practitioner, whose field of activity should be as well defined and as restricted as that of other specialists. He should be as thoroughly trained for his work as the surgeon, the ophthalmologist or the neurologist. The present scheme of medical education makes no provision for such a training. The undergraduate curriculum has no such course of instruction; the hospital internship is not an adequate postgraduate experience.

The encroachment upon the legitimate field of service of the family practitioner by specialists, clinics, industrial medicine, public health activities and many other agencies has left it barren and unattractive. The fault is partly with the family physician himself. His regeneration will come only when he ceases to boast of a universal knowledge of medicine and surgery, and demonstrates to the public that he has a special service to give that is unattainable elsewhere.

He should train himself to be the confidential family medical adviser. He should be a master of the art of the diagnosis and treatment of disease in its incipiency; a capable teacher and practitioner of personal and household preventive medicine; an expert in the conduct of periodical physical examinations. He should have hospital and laboratory facilities at his command and be in close touch with the consultants necessary to extend his restricted and special field of

practice. A physician with these qualifications will find an eager demand for his talents.

As the late Sir James Mackenzie so well pointed out, medical thought has been centered upon the investigation of fully established or advanced disease. The study of disease in its earliest beginnings has been overlooked. Our teachers are men who have been trained, and have obtained their experience, in the clinic, the hospital ward, and the autopsy room. With rare exceptions, they see disease only in its advanced and terminal stages, when function has been gravely perverted or destroyed, and anatomical structure seriously or irreparably damaged. The early and apparently insignificant subjective symptoms that point feebly, but certainly, to oncoming disease do not come under their observation. They cannot acquire the knowledge of these early symptoms so essential to the recognition of disease in its earliest and most curable stage. They cannot adequately teach it.

Here is a field of research and discovery that is broad and practically untouched. Here is the opportunity of the family practitioner.

In this brief address we have lightly touched upon some of the economic problems of medicine which are pressing for solution. They are technical problems and belong primarily to the medical profession. In the settlement of them, however, philanthropy, the State and the general public must lend their aid, but, in the highest interest of all, they must not control. Well meaning but uninformed philanthropists, ambitious politicians, and wild eyed reformers should have no part in their solution. The scientific method of research and experiment must be applied to them. A revolutionary upheaval, such as the control of medical service by the State, would be a calamity.

My young friends, these are some of the problems you will face when you exchange your college years for lives of professional activity. The future of the medical profession will then be in your hands. You should give serious thought to these economic questions and be prepared to assist in solving them; and, in their solution, to uphold the dignity and well-being of scientific medicine.

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# POSTMORTEM CESAREAN SECTION

## REPORT OF CASE WITH LIVING CHILD

ALEXANDER M. CAMPBELL, M.D., F.A.C.S.,† and J. DUANE MILLER, M.D.‡
GRAND RAPIDS, MICHIGAN

Postmortem cesarean section is probably the oldest known obstetrical operation and, although it has been the topic of discussion at intervals for centuries, still, its status has not been firmly settled.

Saving the life of the infant after the death of the mother was an early thought in the minds of men, as shown in the account of the birth of the mythical Bacchus. Æsculapius, the physician, was also said to have been delivered by his father, Apollo, in this way and there are a number of famous characters in history whose lives were saved in a similar manner.

The operation has fallen into disrepute at times on account of the small percentage of living children obtained. However, in recent years reported results have been more encouraging and there is every reason to hope for continued improvement.

The opportunity to perform postmortem cesarean section and to obtain a living child is vouchsafed to but few obstetricians and the dramatic circumstances associated with the incident led us to deliberate upon the responsibility, both legal and moral, which challenges the physician when he is confronted with the possibility of saving a child after the death of its mother.

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The subject was brought freshly to our mind by the following case.

Mrs. M. E. R., aged thirty-nine, white, gravida 6, was admitted to St. Mary's Hospital at six p. m., January 31, 1931. She complained of swelling of the extremities, blurring of vision and extreme exhaustion. Her previous pregnancies were normal. Her last menstrual period was April 24, 1930, making her estimated date of confinement February 1, 1931.

The patient was well until six weeks before admission. An edema of the legs was first noticed. The edema continued and for the two weeks previous to her entering the hospital she had experienced blurring of vision.

An examination showed the presence of a generalized edema, with a blood pressure of 158/90. The uterus was the size of a full term pregnancy with cephalic presentation. The fetal heart was distinct. The urine contained albumin 4 plus and the patient presented the appearance of an extremely sick woman.

The patient was given morphine gr. 1/6 hypodermatically and 20 c.c. of a 10 per cent solution of magnesium sulphate intravenously.

Dr. A. B. Thompson, Jr., was asked to see the case in consultation, at which time he found the blood pressure to be 158/118. At that time the fetal heart had become faint and no fetal movements could be detected.

At 8:05 p. m., two hours after her entrance, there was air hunger and cyanosis and in fifteen minutes the patient was dead.

The mother had been dead at least ten minutes by actual timing when one of us reached her bedside.

Without delay and on the bed on which the patient had died the abdomen was opened by a small bladed knife and a pair of scissors. The uterus was incised and a female infant, weighing six pounds and eleven ounces, was extracted in about thirty seconds.

The child was markedly cyanosed but the heart action was good and after about an hour of continuous resuscitation the child's color improved. Recurring attacks of cyanosis occurred during the first twenty-four hours and were controlled by placing the child in an oxygen tent.

At the present time the baby is living and in excellent health.

Postmortem examination of the mother showed fatty degeneration and focal necrosis of the liver about the central veins, parenchymatous nephritis, bilateral hydrothorax, edema of the lungs, fatty degeneration of the heart, and atrophy of the spleen.

A critical examination of this case and of the situation in general naturally brings forth a number of points for consideration.

First, during what period of gestation can we hope to obtain a living child after its mother's death? The answer to this is the same as for the viability of any infant born at the same period of gestation, and it has been set by various authorities at from twenty-four to thirty weeks. In this respect it is interesting to note the sensible and practical attitude of the church, which fixes a limit of twenty-four weeks, if in the hospital, and of twenty-eight weeks if in the home, the difference being allowed for the better care that can be given the infant in a hospital.

Second, how long after death of the mother can the fetus survive in utero and how is it possible for it to survive? Among the cases reported in literature some state that living children have been obtained as long as from one to two hours after the death of the mother.

The Austrian law requires that any physician seeing a woman with pregnancy advanced six months or more within one hour after her death shall immediately perform a postmortem cesarean section. Linzenmeir concluded that twenty minutes was the greatest length of time after death that a living child could be obtained, and Bacon said that there was no authentic case on record in which the child lived more than twenty-three minutes after the maternal death.

In reviewing the literature one cannot fail to note that the percentage of living children depended quite as much on the promptness with which the child is delivered, after the death of the mother, as on any other single factor, and that most of the living children were obtained in those cases in which the delivery was effected within the first seven to ten minutes.

How does the fetus manage to exist for twenty minutes, or more, after the maternal death?

The capacity of the human fetus to withstand changes in asphyxia is fairly well known. Potter, in advocating delivery by version, has shown quite conclusively that haste is not necessary on account of the infant.

But in a case of asphyxia of the mother does the fetus also die from asphyxia? Living children have frequently been obtained by postmortem cesarean section after considerable periods of asphyxia of the mother, preceding death. Kustner, after obtaining living children by postmortem cesarean section, from two mothers who died following prolonged sufferings with signs of asphyxia, concluded that the demand for acids by the fetus from the blood of the mother is an active function of the placenta and that the fetus is able to live for some time in spite of the concentration in the maternal blood.

However, the prognosis for the life of the fetus is said to be better if the mother dies suddenly from some cause obviating asphyxia. Harrar concluded that the fetal prognosis is better in sudden, rapid, and violent death, in diseases of the central nervous system, heart and kidneys, than after long continued or infectious diseases, diseases of the blood or intoxications in which the blood is altered. And while it is well to remember that the cause of the maternal death does bear considerable weight in the prognosis for fetal life, the prompt and efficient action of the physician in delivering the child is equally important. Inasmuch as most of the infants are in a condition of asphyxia prolonged and energetic methods of resuscitation are necessary.

Realizing that time is an important factor we do not believe that the physician is justifield in searching long for signs of fetal life. If the fetal heart has been heard or fetal movements felt just before or just after death of the mother, it is reasonable to assume that the fetus is living and the physician should act at once. But if neither the fetal heart can be heard nor the fetal movements detected, it should not be assumed that the fetus is dead, for it is within the realm of every obstetrician's experience to deliver a living child when it was impossible to hear the heart beat or perceive fetal movements. It would scarcely seem logical to waste precious moments searching for positive signs of life when perhaps that life depends on promptness of action.

One should proceed to immediate delivery. Experience has shown that postmortem delivery from below (except when the cervix is fully dilated and the head lies low in the pelvis) has usually resulted in the death of the child.

In contrast to cesarean section in moribunda, no special skill is required when the mother is dead. With any sharp instrument at hand the abdominal wall should be opened at one stroke, the fundus incised, and the child extracted. It is well to remove the placenta so that it will not be forced into the vagina by postmortem uterine contraction.

Resuscitation of the child should be continuous and prolonged as long as there is any heart beat and may be discontinued only after every means has been exhausted.

An important consideration in postmortem cesarean section is the legal aspect as it concerns the physician. Law governing this situation apparently had its origin in the Lex Regia of Numa Pompilius, second king of Rome, and the effect of this is still seen in the attitude of the modern European governments. Our countrymen, however, have apparently not seen fit to deal with this situation either in statute or in decision. Duer, more than fifty years ago, said: "The problems involved in the death of a pregnant woman whose child is viable have commanded to a greater or less extent the attention alike of the medical profession, the state, and the church, for many centuries; the literature of the subject dates back to at least 800 B. C. It is indeed curious to note how much discussion its various relations have excited, and in view of this fact it is certainly remarkable that no definite conclusions, binding as to authority, seem to have been reached; no recognition of responsibility as attaching to him who permits a child to die in its dead mother's womb without an effort to save it."

It appears that up to the present time no change seems to have taken place in the legal aspect of this operation. However, we were very much interested to obtain the following opinion from an attorney for one of the large American insurance companies, which was as follows:

"We find no exact case touching on any of these propositions. From established legal principles, however, we believe we can arrive at a logical conclusion herein. We think, however, the questions are still open and therefore academic, and we must, therefore, reason from given legal premises to arrive at our opinion as to what the law is under these circumstances.

"In answer to your first question as to whether it is the duty of the physician to perform said cesarean section whether permission of the relatives is granted or not, in our opinion it is. It is, of course, fundamental that consent must be secured from any patient before an operation, and, in a case of a postmortem, from the nearest relative. That is, on the death of a husband the consent of the wife must be secured before a postmortem, and in the case of the death of the wife consent must be secured from the husband.

"The law, however, recognizes circumstances which prevent the securing of con-

sent. In other words, if an accident has occurred, the nearest relative cannot be secured shortly, and the patient's condition is aggravated by a delay, the Court construes that this is an emergency and under this circumstance holds that the surgeon may lawfully, and it is his duty to, perform the operation as good surgery demands in cases of emergency, without consent of the patient or next of kin. This case was presented squarely to the Supreme Court of Michigan in the case of Delahunt V. Finton in 1928, and the Court wrote a very good opinion which is reported in 221 NW 168, holding that the physician in performing such operation as good surgery demands in cases of emergency, without consent of the patient, is not liable.

"In answer to the second question, as to whether a physician is liable in a suit for damages if the section is performed against the wishes of the family, it is our opinion that the physician is not liable if he employed ordinary care and skill in the performance of the section and if he used his best judgment that the life of the child could be saved in this manner. We think this, too, is an emergency and the Court has said that not only may the surgeon lawfully perform the operation but *it is his duty,* under the circumstances. In an emergency, where one acts according to his best judgment, he is not chargeable with negligence.

"On page 1400 of the Principles and Practices of Obstetrics, by DeLee, we call your attention to the following statement:

> "Even before Numa Pompilius, attempts to save the child by cesarean section after the death of its mother were made, but the results were so poor that most men discontinued the procedure. In recent times the operation has often been done and results are more encouraging. If the pregnancy has advanced beyond the twenty-sixth week no delay is to be allowed after life is positively extinct, but the belly opened at once. It is not even necessary legally to obtain the consent of the husband or the family, though, for his own protection, the accoucheur should get it, if possible.

"Therefore, from the medical standpoint, it is good practice to perform a postmortem cesarean section. This being true, a civil action for damages might follow for the negligence or malpractice of the surgeon or obstetrician in failing to follow the usual and customary practice. We think there is no doubt but what a civil action for damages under these circumstances would succeed.

"As to the criminal phase of the question, we must approach that from a review of legal principles.

"In the case of People *vs.* Stahl (Mich.), 208 N. W. 685, the Court quotes Section 15,224 of the compiled laws of 1915 of Michigan, which reads as follows:

> "Every person who shall administer to any pregnant woman with a quick child any medicine, drug, or substance whatever or shall use or employ any instrument or other means, with intent thereby to destroy such child, unless the same shall have been necessary to preserve the life of such mother, or shall have been advised by two physicians to be necessary for such purpose, shall, *in case the death of such child* or of such mother be thereby produced, be deemed guilty of manslaughter.

"This shows, therefore, the courts of Michigan construe and hold that an unborn child is a legal entity and for an offense against the unborn the wrongdoer will be punished. This holds, therefore, that an unborn child is in effect a living person.

"Manslaughter has been defined as an 'unlawful killing of another where it results from the negligent doing or omission of an act which, though not of itself wrongful, was attended by circumstances which endangered life.'

"In this connection I wish to call your attention to the common law which provides that if the parents fail to provide an infant with necessary food or clothing, thereby injuring the health of the child, the parents are liable. The various states have all passed statutes which punish a wilful neglect or refusal on the part of the parents to support the minor child. Under these statutes a parent has been held guilty of manslaughter for failing to provide medical attendance.

"It would, therefore, logically follow that a physician who failed to perform a postmortem cesarean section, if the fetus is viable, would be guilty of gross negligence, and, therefore, manslaughter. We have seen that good practice requires the postmortem cesarean section and the negligent omission, if it results in death, would undoubtedly support a conviction of manslaughter.

"In this connection we must also bear in mind that a physician is not held responsible for an honest mistake or error in judgment. If, however, ordinary skill and care under a given circumstance would indicate that a postmortem cesarean section was proper

under all circumstances, and we can think of no case in which it would not be, it is our opinion that the physician could be convicted of manslaughter for not performing the operation if the fetus is viable."

## CONCLUSIONS

First, a case of postmortem cesarean section performed ten minutes after the death of the mother and with delivery of a living child has been reported.

Second, the possibility of obtaining a living child by postmortem cesarean section depends on the cause of maternal death and on the period of gestation and largely on the promptness with which delivery is effected after the death of the mother.

Third, it has been shown that it is the duty of any physician who is present at the death of a woman who has advanced beyond the twenty-fourth week of pregnancy, to immediately deliver the child by postmortem cesarean section, if in his opinion the fetus is living. In so doing it is advisable, but not necessary, to obtain the permission of the nearest kin.

Fourth, we believe that physicians should realize their obligation, and opportunity, when the question of performing postmortem cesarean section presents itself, and that by acting with celerity they will be able to save a number of infant lives.

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# SECONDARY ANEMIA: A PRELIMINARY REPORT ON STOMACH*†

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The substances of greatest interest at the present time in the treatment of secondary anemia are: liver, iron, copper, and vitamins. The multiplicity of remedial agents and their various combinations lend support to the assertion that there is no generally approved method of treating the simple anemias.

The existence of an antipernicious anemia factor in hog stomach has been confirmed by numerous observers, but only meager data have been available, however, regarding its value in the treatment of secondary anemia.

Rosenow[1] treated several cases of simple anemia with a stomach preparation without benefit.

Isaacs[2] reported that he had not seen any improvement in secondary anemia treated with desiccated stomach tissue.

The experience of these observers on the hemopoietic activity of stomach in the treatment of simple anemia does not coincide with my findings during the past year based on a study of over one hundred patients. The salient features of this investigation constitute the basis of this report.

*Part of a joint presentation with Dr. R. M. McKean entitled Treatment of the Anemias, given at the Highland Park Physicians Club, May 7, 1931.

†Ventriculin and Iron furnished by Parke, Davis & Co.

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## METHOD OF STUDY

Insofar as possible all patients accepted for treatment were held for a period of observation, during which time frequent red blood cell counts, hemoglobin estimations and reticulocyte counts were made. The majority of all patients studied were out-patients, hence it was impractical to make blood studies daily, although this was done in many instances.

The cases were divided into two groups. The data concerning the first group (controls) observed are presented in Table 1, There was so little difference in behavior as the number of patients was extended, that statistics of the 21 cases cited may be said to represent a true picture of the course of events in the untreated secondary anemia.

TABLE 1. THE BEHAVIOR OF RED BLOOD CELLS, HEMOGLOBIN AND RETICULOCYTES IN 21 UNTREATED PATIENTS HAVING SECONDARY ANEMIA ASSOCIATED WITH VARIOUS CLINICAL ENTITIES

| Patient's Key No. | Diagnosis | Red Blood Cells (million) Admission | Red Blood Cells (million) Discharge | Hemoglobin Per cent Admission | Hemoglobin Per cent Discharge | Reticulocyte Response | Days of Observation | Change R. B. C. | Change Hemoglobin Per cent |
|---|---|---|---|---|---|---|---|---|---|
| 1 Ev. | Hemorrhage | 1.30 | 2.17 | 19 | 30 | 5.4 | 55 | +0.87 | +11 |
| 2 Ta. | Hemorrhage | 1.44 | 3.78 | 15 | 39 | occ. | 25 | +2.34 | +24 |
| 3 Ja. | Hemorrhage | 1.58 | 2.39 | 26 | 28 | 0.8 | 32 | +0.81 | + 2 |
| 4 Cu. | Diet Def. | 1.80 | 3.00 | 40 | 49 | 0.8 | 27 | +1.20 | + 9 |
| 5 Ho. | Hemorrhage | 2.75 | 3.86 | 38 | 53 | 12.5 | 24 | +1.61 | +15 |
| 6 Po. | Tuberculosis | 2.79 | 2.88 | 37 | 30 | | 61 | +0.09 | — 7 |
| 7 Re. | Diet Def. | 2.80 | 2.80 | 42 | 34 | 0.6 | 22 | 0.0 | — 8 |
| 8 Sw. | Hemorrhage | 2.80 | 2.57 | 54 | 52 | 0.5 | 7 | —0.23 | — 2 |
| 9 Ha. | Diet Def. | 2.88 | 3.00 | 50 | 24 | 0.4 | 56 | +0.12 | —26 |
| 10 Tr. | Asthenia | 2.96 | 3.39 | 43 | 39 | 1.4 | 36 | +0.43 | — 4 |
| 11 Ta. | Endometritis | 3.01 | 3.32 | 65 | 64 | 0.4 | 22 | +0.31 | — 1 |
| 12 Ho. | Diet Def. | 3.09 | 3.36 | 45 | 40 | 0.5 | 24 | +0.27 | — 5 |
| 13 Bo. | Diet Def. | 3.16 | 3.79 | 36 | 52 | 0.2 | 75 | +0.63 | +16 |
| 14 Gw. | Diabetes Mel. | 3.37 | 3.54 | 55 | 56 | | 24 | +0.17 | + 1 |
| 15 Mc. | Diet Def. | 3.50 | 3.69 | 55 | 52 | 0.2 | 27 | +0.19 | — 3 |
| 16 Gr. | Hemorrhage | 3.50 | 4.40 | 42 | 59 | 0.5 | 27 | +0.90 | +17 |
| 17 Mc. | Hemorrhage | 3.90 | 4.15 | 55 | 52 | 0.6 | 12 | +0.20 | — 3 |
| 18 Bu. | Hypochr. Anemia | 4.00 | 3.97 | 67 | 46 | 0.5 | 27 | +0.03 | —21 |
| 19 Cl. | Chr. Arthritis | 4.61 | 4.46 | 70 | 68 | | 28 | —0.15 | — 2 |
| 20 Ka. | Hemorrhage | 4.61 | 4.74 | 51 | 56 | occ. | 15 | +0.13 | + 5 |
| 21 Ln. | Tox. Hepatitis | 3.05 | 3.07 | 46 | 49 | occ. | 18 | +0.02 | + 3 |

Since most of the patients were in outpatient departments of local institutions it is obvious that basal conditions remained unchanged, therefore any hematologic variation must be interpreted as being spontaneous and not induced.

Standardized pipettes were used for counting red blood cells. The hemoglobin estimations were made with a Newcomer hemoglobinometer and occasionally with a Dare instrument corrected by the Newcomer apparatus.

Reticulocytes were stained by the "wet method" of Abrami and Brule, using 0.3 per cent brilliant cresyl blue in normal saline solution.

The stomach tissue used was Ventriculin. Iron, when used, was iron and ammonium citrate or ferric citrate U. S. P. VIII. All medication was given orally, the amounts varying as indicated within the limits described in Table 2.

## PERTINENT FEATURES OF THE CONTROL GROUP

There was a predominance of patients in the control group (Table 1) having anemia associated with hemorrhage and dietary deficiency. Many of the patients in the last mentioned category were under the care of welfare and social services, being victims of the prevalent economic depression. There is little doubt that an inadequate food intake was a contributory factor to each patient's anemic condition, even though a moderate degree of food deficiency is usually not believed to be an exciting cause of anemia.

In the last column of Table 1 the change in the hemoglobin and red blood cells is given for each patient. Three of the group showed slight decreases in red blood cells. On the other hand 11 patients lost hemoglobin, the losses varying from 1 per cent to 26 per cent.

It is axiomatic that a state of anemia is a dynamic stimulus to hemopoiesis. Nevertheless, this is more apparent than real in view of the fact that spontaneous regeneration of blood elements, whether occurring in acute or chronic anemia, is arrested usually before normal levels are reached. In the control patients (Table 1), a tendency to

TABLE 2. THE RESULTS OF TREATMENT WITH VENTRICULIN OF 24 PATIENTS HAVING SECONDARY ANEMIA DUE TO VARIOUS CAUSES

| Patient's Key No. | Diagnosis | Red Blood Cells (million) Admission | Red Blood Cells (million) Discharge | Hemoglobin Per cent Admission | Hemoglobin Per cent Discharge | Reticulocyte Response | Days of Observation | Change R. B. C. | Change Hemoglobin Per cent |
|---|---|---|---|---|---|---|---|---|---|
| 22 Gr. | Tuberculosis | 1.80 | 3.60 | 23 | 40 | 0.9 | 15 | +1.80 | +17 |
| 23 Kr. | Hemorrhage | 1.82 | 2.04 | 17 | 19 | 2.8 | 8 | +0.22 | + 2 |
| 24 Sh. | Diet Def. | 2.10 | 5.08 | 43 | 93 | 4.2 | 49 | +2.98 | +50 |
| 25 Kn. | Tuberculosis | 2.36 | 3.29 | 42 | 60 | 3.5 | 8 | +0.93 | +18 |
| 26 Ca. | Hypothyroid | 2.48 | 4.30 | 35 | 75 | 10.0 | 26 | +1.92 | +40 |
| 8 Sw. | Hemorrhage | 2.57 | 4.90 | 52 | 97 | 16.0 | 22 | +2.47 | +45 |
| 28 Ca. | Tuberculosis | 2.67 | 3.20 | 37 | 50 | 2.8 | 5 | +0.53 | +13 |
| 29 Wd. | Syphilis | 2.75 | 4.00 | 38 | 45 | 1.2 | 60 | +1.25 | + 7 |
| 30 Wa. | Carcinoma | 2.89 | 3.61 | 32 | 45 | 2.0 | 57 | +0.72 | +13 |
| 21 Ln. | Toxic Hepatitis | 2.93 | 3.27 | 47 | 46 | | 28 | +0.34 | — 1 |
| 9 Ha. | Diet Def. | 3.00 | 4.90 | 24 | 58 | 0.2 | 61 | +1.90 | +34 |
| 31 Da. | Hemorrhage | 3.00 | 4.24 | 49 | 52 | 3.2 | 6 | +1.24 | + 3 |
| 32 Sl. | Syphilis | 3.05 | 4.30 | 60 | 80 | 2.0 | 28 | +1.25 | +20 |
| 33 My. | Chr. Nephritis | 3.06 | 3.60 | 65 | 78 | 1.2 | 28 | +0.56 | +13 |
| 34 Zy. | Hypothyroid | 3.09 | 4.70 | 68 | 90 | 1.0 | 128 | +1.61 | +22 |
| 35 Mi. | Hypothyroid | 3.09 | 5.70 | 52 | 97 | 0.6 | 119 | +2.61 | +45 |
| 7 Re. | Diet Def. | 3.21 | 4.45 | 39 | 45 | 0.6 | 31 | +1.24 | + 6 |
| 11 Ta. | Endometritis | 3.30 | 4.70 | 64 | 94 | 1.0 | 38 | +1.40 | +30 |
| 36 Pe. | Arthritis | 3.40 | 5.10 | 85 | 97 | 1.2 | 17 | +1.70 | +12 |
| 37 Dv. | Hypothyroid | 3.60 | 4.91 | 74 | 96 | 0.5 | 75 | +1.31 | +22 |
| 15 Mc. | Diet Def. | 3.69 | 4.45 | 52 | 46 | | 35 | +0.76 | — 6 |
| 13 Bo. | Diet Def. | 3.79 | 5.00 | 52 | 45 | 1.0 | 35 | +1.21 | — 7 |
| 38 Hu. | Syphilis | 3.89 | 4.82 | 80 | 90 | 0.4 | 12 | +0.93 | +10 |
| 39 Be. | Diet Def. | 4.30 | 4.95 | 36 | 57 | 0.5 | 14 | +0.65 | +21 |

improvement was evident, especially in anemia resulting from hemorrhage, but it is not a sustained and constant action. It is wholly absent in the chronic hypochromic anemia having a pronounced hemoglobin "lag."

In general, the patients available for control study were not given treatment until it was evident that no further spontaneous regeneration of red blood cells and hemoglobin was to be expected.

### THERAPY WITH STOMACH TISSUE

The results of the treatment of secondary anemia in 24 patients are given in Table 2. The amount of Ventriculin used varied between 10 and 30 Gm. daily, the dosage being higher in the more severe grades of anemia.

Patients "8 Sw," "9 Ha," "7 Re," "11 Ta," "15 Mc" and "13 Bo" in Table 2 are to be found in the control group in Table 1. Patient "8 Sw" had an acute blood loss for which he was given 30 Gm. of Ventriculin daily in lieu of blood transfusion. A reticulocytosis of 16.5 per cent occurred in the first 24 hours. The regeneration of red blood cells and hemoglobin was extremely rapid, attaining normal in 22 days.

Patients "8 Sw," "23 Kr," "24 Sh," "25 Ku," "26 Ca" and "31 Da" showed "reticulocyte responses" during the early phase of treatment. Mettier and Minot[8] have pointed out that the degree of reticulocytosis during the treatment of certain sorts of secondary anemia by iron is a fair indication of efficacy and adequacy of therapy.

This criterion is not borne out in my study in patients treated with stomach. Many rapid hematologic recoveries ensued without appreciable reticulocytosis. These notable exceptions in no way minimize the desirability of a reticulocyte response in anemias due to blood loss and dietary deficiency mentioned by Mettier and Minot as being those in which iron is effective in producing this hemopoietic phenomenon. Further investigation is needed before the con-

clusion can be reached that stomach is less effective than iron in eliciting reticulocytosis.

All patients in this group showed satisfactory erythropoiesis under treatment but the regeneration of hemoglobin is seemingly much more difficult for the hemopoietic system to accomplish when an anemic state has existed for some time.

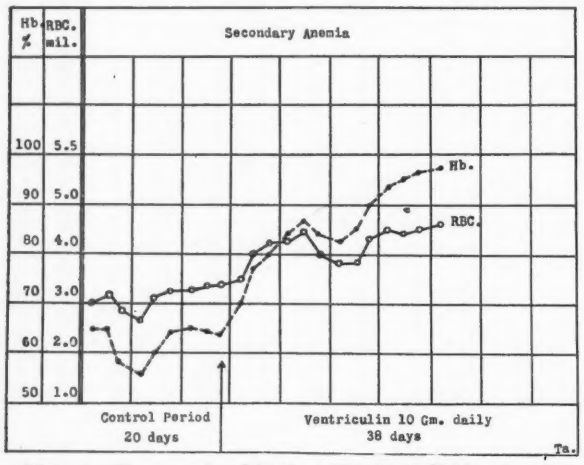


Plate 1. Hemograph of Patient "11 Ta," Tables 1 and 2. Recovery was inconsequential during 22 days control period. Hemopoiesis was stimulated by the daily use of Ventriculin 10 Gm. and the red-blood cells and hemoglobin reached normal in 38 days.

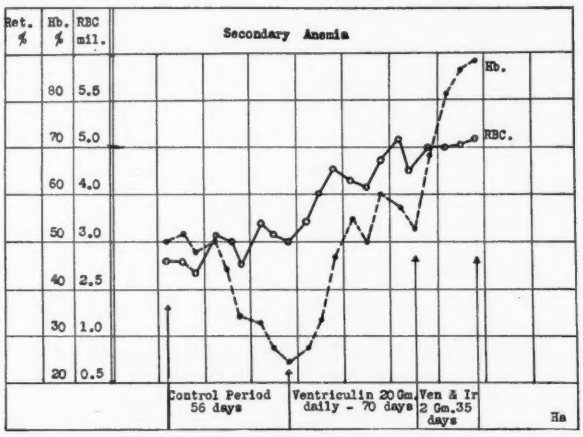


Plate 2. Hemograph of patient "9 Ha," Tables 1 and 2. There was a steady decline in hemoglobin during the control period of 56 days. Both red-blood cells and hemoglobin were exalted by the use of 20 Gm. of Ventriculin daily for 70 days. A slight decrease in hemoglobin occurred necessitating the addition of ferric citrate 2 Gm. to the stomach tissue. Recovery followed rapidly.

### THE HYPOCHROMIC TYPE OF ANEMIA

About 20 patients having chlorotic anemia have been studied during the past few months. The condition exists chiefly in the female in middle life, and is accompanied usually by general asthenia, achlorhydria and undernutrition. The hemoglobin is generally at a low level compared with the red blood cells, giving a color index of 0.5 or less.

Mills[4] has described this type of anemia under the term of "idiopathic hypochromic anemia" and has submitted clinical data to show that copper and iron are of therapeutic value. Giffin and Watkins[5] refer to this secondary anemia as "cryptogenetic" in character. Waugh[6] has described his cases under the heading of "hypochromic anemia." Adamson and Smith[7] in a recent report regard the condition as chlorosis.

The use of iron in the treatment of chlorotic anemia is believed to be indispensable. In Table 2 all patients showed definite stimulation of red blood cell under treatment with Ventriculin, but patients "23 Kr," "29 Wd," "30 Wa," "21 Ln," "7 Re," "15 Mc," and "13 Bo" exhibited an unmistakable hemoglobin "lag." Only upon the addition of ferric citrate to the stomach tissue in daily amounts varying from 1.8 to 3.0 Gm., was it possible to stimulate hemoglobin formation. Chart 2 shows the effectiveness of stomach tissue in promoting red blood cell formation in chlorotic anemia and its ineffectiveness in restoring hemoglobin to a normal concentration until iron was added to the medicament.

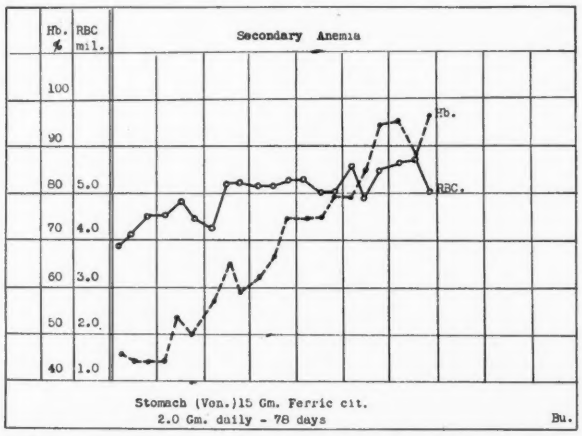


Plate 3. Hemograph of patient "18 Bu," Table 1. During 27 days control period this patient showed a decline in red-blood cells and hemoglobin. The daily use of Ventriculin 12 Gm. and ferric citrate U.S.P. VIII 2.0 Gm. stimulated hemopoiesis and recovery ensued in 78 days.

Chart 3 shows the favorable action of iron in chlorosis in a woman of middle age who had a persistent lassitude and a recognized anemic state for several years prior to coming under observation several months ago. Her recovery was rapid, but the recidivistic tendency of an anemia of this

character makes it imperative to follow this patient by frequent blood studies for another year at least. An early recovery does not predicate a permanent cure in hypochromic anemia; therefore close supervision must be exercised and treatment resumed if an appreciable reduction in red blood cells or, more important, in hemoglobin, seems imminent.

SUMMARY

1. An antipernicious anemia factor is known to exist in hog stomach.

2. Meager clinical reports by other observers on the use of stomach in secondary anemia offered no evidence of therapeutic value.

3. Secondary anemia associated with various clinical entities has been successfully treated with stomach alone or in combination with iron.

4. Reticulocytosis has been observed following the use of Ventriculin in secondary anemia. Some patients regenerate red-blood cells and hemoglobin rapidly without exhibiting a definite "reticulocyte response."

5. Cases of chronic anemia having a distinct hemoglobin "lag" are frequently encountered. This anemia requires treatment with iron.

6. Hypochromic anemias show a recidivistic tendency and require supervision for some time after recovery of the red blood cells and hemoglobin.

Note: The author acknowledges with thanks the assistance of members of the staffs of Grace, Harper and Receiving hospitals during this study. Furthermore, the technical assistance of Mr. E. M. Schleicher is gratefully acknowledged.

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# NON-SPECIFIC PROTEIN THERAPY IN GYNECOLOGY*

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The principles on which a paper of this nature is based should coincide with known physiologic laws. For a long time now we have assumed that the restoration of abnormal bodily functions accompanied by tissue changes is due to phagocytic activity of the white cell, and, accordingly, any therapy which could increase that activity should be of value. We are not prepared to say that through leukocytosis alone or even in part does the efficacy of the so-called milk treatment depend, but it is a reaction of some kind and the good effects obtained are in proportion to that reaction and in fact constitute a partial guide to our employment of the treatment. We assume that protein therapy increases the activities of all the cells of the body, but particularly those cells which have been affected by infection. Weichardt believes that the results following non-specific protein therapy are due to a definite plasma activation and that the resulting reaction represents a summation of all forces of resistance of which the body is capable. The leukocytes become more active and their number increased.

Von den Velden, Luithlen and Starkenstein, working separately, have each observed the decided alterations that take place in the permeability of the capillaries after non-specific injections. This implies, says W. F. Petersen, that there is an increase in the lymph flow, that the irritability of the nerve cell is increased and there is a freer exchange between blood plasma

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and the cell content; naturally, therefore, when the cells have lost their power for stimulation, from fatigue beyond the point of reaction, no amount of injection of non-specific protein will avail. In the light of our present knowledge, therefore, in all probability the permeability of the cell membrane induced by non-specific protein therapy is the fundamental cause for any good that may come from its use.

This coincides with our clinical experience, namely, that good results from non-specific protein therapy should be anticipated only before the cells have lost their activity, or, in other words, early in the disease.

Physiologists have long since shown that cells of an abnormal character, so long as they are not exhausted or fatigued beyond recovery, are more susceptible to any kind of stimulus than the normal cells are and as a result the defensive cells in this combat for life are whipped up to new activity as seen by a changed condition of the nucleus, an acceleration of cellular metabolism and, as a result of this, phagocytosis is increased. It is the reaction, therefore, not the agent causing it, that is immediately responsible for the results. It may be quite probable that the body has a reserve of non-specific antibodies for emergencies. The non-specific protein treatment with milk was introduced into medical practice by Robert Schmidt of Prague, in 1916. It seems that Saxl, in 1916, was the first to make use of milk injections in infectious disease. In the same year, Gerstein reported that a series of cases of inflammatory adnexal disease were treated at the Hallensar Clinic with milk injection. Since for some reason the results were not good, they determined to try Aolan, which is a fat-free milk product which does not bring about the undesirable symptoms as whole milk. In all, they treated but sixteen cases of pyosalpinx with a total of seventy-five injections. The results with this fat-free product were no better in their hands than those obtained by the usual conservative method. They then determined to revert to the use of fresh cow's milk as advocated by Schmidt. This was sterilized for ten minutes in a water bath and 10 c.c. injected intragluteally. In most cases a fever of one or two degrees developed, lasting for several days. Pain at the site of the injection was complained of but there was no case of abscess formation. In a number of cases a focal reaction was noted as expressed in an exacerbation of pain in the abdomen after the injection.

Voehl tried Caseoson, another milk preparation, inaugurated by Lindig, who claimed that casein represents the potent factor in the milk. The consensus of their opinion is that the results are more or less the same, whatever the form of milk used. This was not found to be true in our clinic at the Receiving Hospital, Detroit, where these various products were all used, but soon discarded because they did not seem to bring about the desirable reactions as were obtained by whole milk. Dr. George Gellhorn of St. Louis was the first man in this country to adopt milk injection therapy in the treatment of pelvic infections. He and many others in America have reported favorable results following this form of treatment. Dr. Gellhorn reported a large series of cases and is continuing its use. Robert Schmidt, who introduced it, selected it because it was always available, even in the remotest village and thus many cases through economic necessity could be treated at the patient's own home, and for the same economic reason many of the city patients who could not be hospitalized might be treated in the out-patient departments. The preparation used in our clinic is that now most commonly accepted, being whole milk which is put up in ordinary test tubes in 15 c.c. quantities, stoppered with sterile cotton and sterilized by placing in a water bath and boiling for ten minutes; the tubes of milk are then kept on ice until used. The site of injection is, preferably, the gluteal area, and a long, thin, very sharp needle is used. When the needle is well in the muscle, it is then withdrawn for a very short distance, to be sure that the point is not in the lumen of a vessel. The injection is made quite slowly and with but little pain, although the bulk of the milk injected may cause momentary discomfort. The initial dose is usually 5 c.c. and occasionally but 3 c.c. if the patient is very weak, or whenever any of the special conditions to be mentioned later among the contra-indications demand caution. The second and third doses are given after an interval of one or two days or after the reactions of the former doses have subsided. Our procedure is to give a series of three injections and observe the patient's re-

sponse to the treatment for two or three days before beginning another series. During this time a pelvic examination is made; a blood count and sedimentation is made, and the patient is kept in bed with the indicated symptomatic treatment.

The use of sterile milk injection was begun on this service in 1924, and up until January of this year 1,207 patients have received this treatment while in-patients of the hospital, and approximately another 1,000 cases have been treated in the out-patient department—in all, there have been at least 8,000 injections given, including those hospitalized and those seen in the out-patient clinic. In not a single instance has abscess occurred.

The types of case treated among the 1,207 hospitalized patients may be classified as follows:

| | No. | Per cent |
|---|---|---|
| Acute salpingitis | 447 | 37 |
| Subacute salpingitis | 374 | 31 |
| Chronic salpingitis | 217 | 18 |
| Fibroids with acute infection | 36 | 3 |
| Septic abortions | 72 | 6 |
| Pelvic abscesses | 36 | 3 |
| Bartholin abscesses | 25 | 2 |

Among the chronic salpingitis patients were found cases of chronic pyosalpingitis with low sedimentation rates, which were found at operation and diagnosed from the pathological specimens removed. The majority of these patients, therefore, fall under the head of acute cases and the total percentage may be listed as 82 per cent or 990 cases.

In 975 patients, or 80.8 per cent, they showed a reaction of 100.4 degrees temperature or more, in at least two injections in their series of three. Of the remaining 232 patients, or 19.2 per cent, who did not show this reaction, the majority were cases of chronic salpingitis, as proved by operation.

All the clinics are agreed that any reaction will appear within six to eight hours after injection. It has been our experience that the four readings at two-hour intervals will show the maximum temperature reached at the end of eight hours, which is in keeping with this experience.

As demonstrated in the slides, the time of injection is shown by a vertical line drawn on the temperature chart and the two-hour readings are recorded in red ink. In this manner, a graphic record is presented along with the daily temperature of the patient, and thus a more complete picture of the reaction is available at a single glance.

Fairly uniform symptoms occur in the patient's reaction to the injection of sterile milk, although there may be a variation after one or more injections, and most certainly there is a marked difference in the response of different individuals. There is a general reaction which consists of a chill followed by rising temperature that reaches its maximum in from six to eight hours after injection and subsides usually within twenty-four hours. In our series the chill varies in its length from a few seconds to 46 minutes; the latter having no apparently injurious effect on the patient. The temperature range was from 1.5 to 7 degrees, depending largely upon the acuteness of the disease. Frequently associated with these symptoms are nausea and occasional vomiting, headache and general malaise. Some patients may have a focal reaction which consists of increased pain over the diseased tubes; this, however, lasts but a few hours and is not a frequent manifestation.

Within twenty-four hours after the injection, the general symptoms usually subside and a very interesting phenomenon occurs, which may be termed a condition of euphoria. This has been observed by other clinicians. It has been found more constant among patients who have had a sharp reaction. They feel distinctly better; their pain has been relieved; appetite and general appearance are improved: it is this state of euphoria which makes the treatment of these patients somewhat difficult, since a great number feel so much improved that they insist on going home, against the physician's advice, and in the face of findings which show infection to be still present, although subsiding. An illustration of this type will be shown later on one of the slides.

In our series, there has never been an anaphylactic shock and only three cases have been reported in the literature. All writers are agreed, however, that there are definite contra-indications to the use of sterile milk, for instance:

(1) Cardiac decompensation
(2) Diabetes
(3) Alcoholism

Some still question whether or not pregnancy may belong to this group. Petersen enjoins great caution where there is a

history of hypersensitiveness on the part of the patient (serum sickness, asthma, urticaria, angioneurotic edema and epilepsy or other grave forms of nervous instability). We would like to add pulmonary tuberculosis to this group of contra-indications, since during the past two years we have had two cases of quiescent pulmonary tuberculosis with associated acute salpingitis which have flared up and become active lesions, following the injection of milk.

In practically all these cases of salpingitis, the history and clinical findings have pointed to gonorrheal origin, and it is this type of case which responds best to this form of treatment. The few cases of Bartholin abscess that have shown improvement are those of recent acute illness in which gonorrheal organisms were found, which confirms the findings from Gartner in his treatment of Bartholin gland inflammation.

We have treated 72 cases of septic abortion with sterile milk which have apparently been improved, since the febrile course has been shortened as compared with those who have not received it. The reaction does not seem to be as sharp, however, and the improvement is not as spectacular as those of acute gonorrheal infection. Our findings bear out Gellhorn's contention that exudates are brought to absorption but adhesions are left undisturbed. Certain cases with large adnexal tumors have responded so that these masses have completely disappeared; this has also occurred in a few cases of pelvic abscesses which were not opened and drained.

Under proper treatment with milk, rest and careful supervision, many of these exudative masses respond well, although the more chronic ones do not, and later operation discloses a great deal of fibrous inflammatory tissue associated with the more acute process. This implies, therefore, that those patients who have had repeated attacks are the possessors of much resultant fibrosis and do not respond to the treatment which would be applicable to mere exudates of acute processes.

There were fairly uniform clinical and laboratory findings in the acute cases treated as well as uniform symptomatology. The average temperature before treatment in the acute cases was 100.6 degrees to 101.8 degrees, while the average blood count ranged between 13,000 and 14,500 white blood corpuscles per cubic centimeter. The average leukocyte count, determined shortly after the height of the fever in a series of 582 acute cases, was 15,400 to 16,200 white blood corpuscles per cubic centimeter. The highest leukocyte count in this series after injection was 28,000 cells, while the leukocyte count in the chronic cases before injection averaged 9,200 cells and practically no change occurred after the injection. The average temperature changes following each of a series of three injections may be listed as follows:

1st injection of 5 centimeters....101.8 degree average
2nd injection of 10 centimeters....103.2 degree average
3rd injection of 10 centimeters....103.6 degree average

As I have stated, the highest temperature recorded was that of 107 degrees with no apparent ill effects.

During the past one and a half years the sedimentation rate has been routinely used and followed carefully: 232 patients treated during this period showed the following averages:

186 acute cases.....9-30 min. average 16-20 min.
46 chronic cases.....75 minutes plus

The sedimentation test is of great importance since it shows the presence of infection and pus even after the blood count and temperature have become normal. Of these 1,207 patients, 43 per cent, or 519, have been operated after receiving this form of treatment, while the remaining group have shown such improvement as to refuse operation in some instances, and not require operation in others; 316 cases operated received only three injections of sterile milk and comprised 60.8 per cent of the total cases operated; 16 per cent or 83 patients received less than three injections; and 23.2 per cent or 120 cases were given more than three injections.

The average number of days in the hospital before operation ranged between 7 and 14 days and there were extremely few cases which needed more time and treatment before being ready for operation. Before the use of sterile milk, patients with acute infection or acute exacerbation required 14 to 28 days rest and routine symptomatic treatment before they were ready for operation. As is plainly evident, the use of sterile milk has resulted in a distinct economic saving to these patients. The usual indications for operation were: clinical history of the condi-

tion, clinical findings, normal temperature for several days, white blood count of 10,000 or less, sedimentation rates indicating a subsiding infection, and absence of the usual contra-indications. The only exceptions to these rules were those of pelvic abscesses and a few chronic pyosalpingitis cases which were refractory after a period of treatment. The mortality rate of 1.5 to 2 per cent remained practically unchanged for the entire service because of the requirements already referred to. No frankly acute case of salpingitis was knowingly operated. The use of sterile milk, however, does get these patients ready for operation sooner than if it had not been used.

From the foregoing account, it is not to be assumed that all cases during the past seven years were treated with sterile milk. Each one of these 1,207 patients was selected for treatment after careful deliberation, and consideration of all the data available, including the patient's history, physical and laboratory findings. Each patient was observed after each injection and the response noted, so that it may be said that this is a series of carefully supervised treatments and not a haphazard cure-all.

Milk therapy should be supplemented by the long tried constitutional supportive treatment, such as good food, plenty of water inside and out, fresh air and tonics. Milk is but another remedy placed in our hands for combating pelvic infection, but by no means should it replace those agents which have been employed effectively through the years.

## SUMMARY

1. Should cellular repair depend upon the increase of leukocytes and their activity, then it would seem that protein therapy is rational.

2. It is not a specific but should be used as supplementary to other recognized measures.

3. Acute cases of adnexal disease are those most adaptable to its use.

4. The sedimentation of the red cells has been a great help in our selection of suitable cases for this treatment.

5. Those patients who have had repeated infection, with resulting fibrosis, receive little or no benefit.

6. In none of our patients have the reactions done harm where contra-indications were adhered to.

7. In 8,000 injections no abscess has developed at the local site.

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# SURGICAL TREATMENT OF SPINAL BLOCK*

## REPORT OF A CASE OF PFEIFFER'S BACILLUS MENINGITIS TREATED BY OPEN DRAINAGE

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Meningitis due to Pfeiffer's bacillus in young infants is rare and recovery is decidedly uncommon. The case reported here is interesting because it involves the successful use of a method of treatment which so far as the writers are able to learn has not been employed; namely, open drainage of pus within the meninges of the spinal cord.

### CASE HISTORY

D. M. F., white, female infant, age eight weeks, born February 14, 1930.

April 14, 1930. Chief Complaint: Vomiting.

Past History: Full term, normal delivery, the firstborn of parents who were in good health. Present illness began two weeks previously, when the child became irritable and had several attacks of vomiting. This persisted for a week and then the child appeared well. When first seen the child had been sick one day. She was extremely cross and irritable and had vomited several times although it was not apparently of the projectile type.

A physical examination showed a well developed, well nourished female white child who was extremely irritable. Rectal temperature was 103 F. The general physical findings were essentially negative as well as those of a neurological examination.

The urine showed a considerable amount of pus with some clumping. The following day twitching of the lower extremities was observed. There was no bulging of the fontanelle, the neck was not stiff, and the Kernig and Brudzinski signs were negative. Because of the possibility of meningeal irritation, a spinal puncture was attempted. No fluid was obtained, so a cisternal tap was done. The fluid was not under pressure, it was clear, and examination showed only ten cells. There was no globulin, and a practically normal sugar. Culture was negative. The symptoms persisted for a week, then the temperature gradually subsided and pus disappeared from the urine. She was asymptomatic for four or five days and then there was a recurrence of the irritability, vomiting and fever. A second lumbar puncture was attempted, which again gave no fluid. It was believed that the diagnosis was encephalitis. The child's condition did not improve during the next few days, so she was admitted to the hospital and transfused by the direct method from a child who had had an attack of encephalitis six months previously. A cisternal tap at the time of transfusion showed no increase in pressure. There was a small amount of blood obtained with the fluid, so it was impossible to determine whether there was an increase in cells. Culture made at this time was negative. For ten days there was marked improvement, the temperature approached normal, the twitching disappeared, and the irritability became markedly decreased. Then the symptoms became more severe, and on the fourth of June the child's temperature reached 104 F. Because of the success of the first transfusion it was repeated, using the same donor.

Laboratory studies showed a red blood count of 3,750,000 cells. White blood cells 73,800, with 74 per cent polymorphonuclear neutrophiles. The following morning the blood count had dropped to 29,500 white blood cells with 59 per cent polymorphonuclear neutrophiles. A cisternal puncture showed a normal fluid with a negative culture. The following day the child again appeared much better, the temperature dropped to 101 F. and fluctuated between 100 and 101 F. for the next four weeks. On the first of July it was noticed that there was a diminution in the reflexes of the lower extremities, and the child began to vomit again at irregular intervals. The temperature fluctuated from 99 to 103 F. and pus reappeared in the urine. On the eighteenth of July, a spinal puncture was again attempted and by using a syringe connected to the needle it was possible to withdraw a small amount of thick pus. During the period between the first and eighteenth of July it was also noticed that the child's head was becoming gradually retracted. Physical examination on the eighteenth of July showed a fairly well developed and nourished child, resting comfortably with her head retracted. The tissue tone was poor and the mucous membranes were extremely pale. The fontanelle was patent and not bulging. There was a partial paralysis of the abdominal muscles and a complete flaccid paralysis of the lower extremities. The pus obtained by lumbar puncture showed Pfeiffer's bacillus both in the direct smear and on culture. The fluid from the cistern showed a normal cell count, faint trace of globulin, normal sugar and no organisms. Air was introduced in an attempt to outline the block but was unsuccessful and X-rays of the spine were entirely negative. Because of the conclusive demonstration of a block and the fact that the course had been progressively unfavorable, it was decided to attempt an open drainage.

On July twenty-second a laminectomy was done. An incision was made over the lumbar spine. The spinous processes of the third and fourth lumbar vertebrae were removed. The dura was opened and about ten cubic centimeters of pus escaped. This was under tension. The upper end of the wound was closed and a rubber drain was placed in the lower angle.

The child withstood the operation very well, and the following morning appeared considerably better. On the seventh of August she was discharged from the hospital with a normal temperature, in apparent good health. The wound was completely healed. During the next six weeks the paralysis of the abdominal muscles and of the lower extremities almost entirely disappeared.

On the first of October, the child again became

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restless and irritable. Her temperature rose to 101 F. and she refused food. Two days later she began to vomit and her temperature remained elevated. On the eighth of October, lumbar puncture and aspiration showed a small amount of pus. Physical examination showed a recurrence of the flaccid paralysis of the lower extremities. The following day the child was operated again.

An incision was made through the old scar. Pus was encountered in the subcutaneous tissue. Upon proceeding further it was observed that pus was escaping from the intradural space. This was again opened widely. No effort was made to close the wound.

Following the operation the child's general condition was very good. Her temperature ran a septic course gradually approaching normal on the twenty-second of October. On the twenty-fourth of October, her temperature again rose and examination of the urine showed numerous pus cells. Since then there has been no recurrence of the spinal abscess and there has been a gradual return of the tone and reflexes of the abdominal muscles and muscles of the lower extremities. At the present time the child is able to stand and walk when supported. The child's general condition is excellent.

### DISCUSSION

This case is reported because of the rarity with which the diagnosis is made and because of the treatment. When one fails to obtain spinal fluid by lumbar puncture and finds a normal cisternal fluid, even though the case appears to be one in which there is some spinal involvement, it is usually felt that the lumbar puncture was not properly done. This case shows the importance of aspiration when doing a spinal puncture.

If pus is obtained from the lumbar puncture and a normal fluid from the cistern, open drainage would seem to be the method of choice. In a case similar to the one reported, where an attempt was made to wash the spinal canal from the cistern, the infection was spread through the cerebro-spinal system. Meningitis developed and the child promptly died.

### CONCLUSIONS

1. A case of Pfeiffer's bacillus meningitis which healed spontaneously by walling off the infection in the spinal cord is reported.
2. Open drainage of the walled off process was done successfully.
3. Open drainage would seem to be the method of choice when pus is obtained by lumbar puncture with normal cisternal fluid findings.
4. Cases presenting obscure symptoms suggestive of cerebro-spinal involvement should be examined carefully to rule out walled off pus within the spinal meninges.

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## PRACTICAL PROBLEMS IN POLIOMYELITIS*

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Cogent problems in clinical interpretation and judgment arise from the changing concepts of poliomyelitis. The condition no longer is considered a relatively rare infectious disease of the central nervous system, but, by contrast, a common and widely distributed general systemic disease, seldom progressing to involvement of the central nervous system. This revision of attitude has stimulated endeavor toward diagnosis of the disease before paralysis occurs.

I often use the homely expression, that diagnosis of poliomyelitis in its early stages rests upon a healthy suspicion and a lumbar puncture. This discussion defines more precisely just what constitutes that healthy suspicion, with particular emphasis on the "healthy" part of the definition. Case histories will serve to illustrate the principles that have directed conduct of a relatively large group of suspected cases. Paralytic poliomyelitis will be considered in relation to prognosis and treatment.

### CLINICAL NATURE OF POLIOMYELITIS

The clinical course of poliomyelitis has been well differentiated into three stages. These are better appreciated by reference to the accompanying chart (Fig. 1).

The first stage represents the early systemic manifestations of the disease. The major symptoms include fever, averaging

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between 101 F. and 102 F., headache and some disturbance of the gastro-intestinal tract, commonly indicated by nausea and vomiting. This stage of the disease usually

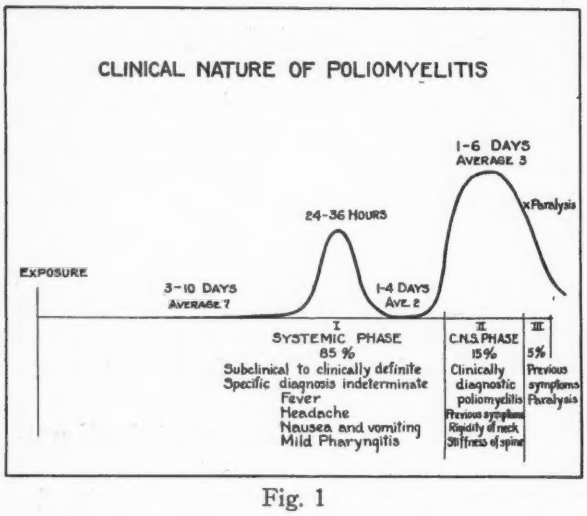


Fig. 1

lasts from 36 to 48 hours. Many times it is clinically definite and recognizable as a disease process, but perhaps more frequently these symptoms are of such minor degree as to escape attention, or, indeed, the process may be of subclinical nature, not recognizable by ordinary diagnostic criteria. Granted, however, that the morbid changes are sufficiently distinct to constitute recognizable disease, the identity of the infection, nevertheless, remains indeterminate at this time. The systemic phase of poliomyelitis presents no characteristics definitely qualifying it as such.

The disease may or may not progress beyond the initial phase. Commonly it does not. In the event that it does, a latent period usually intervenes before symptoms of clinical progression become manifest. This lag period usually lasts from one to four days, averages two days, and occasionally extends more than a week. By contrast, the latent period may not develop at all, the clinical course being a rapidly progressive one comparable to that of fulminating infections in epidemic meningitis and other diseases. Involvement of the central nervous system is the outstanding feature of poliomyelitis in its second stage. Fever recurs and the headache returns with increased intensity. There are definite indications of meningeal irritation; stiffness of the neck and tenderness or rigidity of the spine. Vasomotor disturbances may be present, with the tache cerebrale prominent. Muscular tremors indicating the probable site of future paralyses are not uncommon, and, indeed, often precede rigidity of the spine or neck. Paralysis may be anticipated, on an average, by the third day of this second stage. The disease can be determined clinically as poliomyelitis before that time. This is the stage of the disease commonly designated preparalytic poliomyelitis.

Determination of poliomyelitis of the third stage, that of definite paralysis, is not a difficult matter.

Lacking more definite diagnostic criteria for the systemic stage, the relative proportion of cases in each of these three groups can not be determined with any degree of accuracy. Yet it is interesting, and of perhaps practical value, to attempt some quantitative estimation. Thus I would feel that perhaps 80 per cent of all clinically recognizable infections progress no farther than the first stage, with 20 per cent showing some suggestion of involvement of the central nervous system. Even in the latter group, the process is commonly self-limited before paralysis develops. The proportion of all affected persons who actually develop paralytic phenomena is very likely less than 5 per cent.

With this general conception of the clinical nature of poliomyelitis, may we now consider the practical management of patients suffering from illnesses suggestive of poliomyelitis in its early stages.

## SYSTEMIC PERIOD IN POLIOMYELITIS

We must admit complete inability to exactly designate an infection as poliomyelitis, when the signs and symptoms are limited to those of a purely systemic invasion. Observation of many such patients permits the opinion, however, that they present a rather uniform clinical appearance. By comparison with others in the early stage who eventually progress to paralysis, there is usually no reason to doubt that they actually are cases of poliomyelitis. The following case history illustrates this type of infection:

*Case 1.*—Patient Kenneth B., Case Number 18657, was a boy four years of age who became acutely ill on September 23, 1931, with a fever and headache. He vomited that day, also the next and the following one. His illness was attended by diarrhea on the day of onset, and shortly thereafter he complained of abdominal pain. There was a

question in the mind of his physician whether or not he actually had stiffness of the neck. He was admitted to the hospital on the third day of illness. Physical examination at that time revealed a general blotchiness of the skin, apparently of vasomotor origin. The mucous membranes of the pharynx were moderately injected. The tongue was coated. Examination of the heart and lungs was without moment. No stiffness of the neck or spine could be determined. Examination of the skeletal muscles revealed no weakness or tenderness. The abdominal reflexes could not be elicited. Deep tendon reflexes were without change. The blood count at this time revealed 4,130,000 erythrocytes, hemoglobin 70 per cent, total leukocytes 6,100, of which 34 per cent were neutrophiles and 66 per cent lymphocytes.

In the absence of clinical evidence of meningeal irritation (rigidity of the neck, stiffness of the spine or muscular tremors) spinal juncture was deferred. On the day after admission to the hospital the maximum fever was 99.2 F., subsequently was within normal limits, and by the sixth day of illness the child had completely recovered from his indisposition. No progression beyond a systemic infection was noted, and yet the clinical nature of his illness was precisely that many times observed with patients ultimately developing paralysis. The problem presented the attending physician, of just what to do under such circumstances, is by no means an easy one. The management of these cases involves certain definite considerations.

*Rest in Bed.*—Complete rest constitutes the most important single principle in the management of patients with the paralytic form of poliomyelitis. It should be prescribed just as rigorously for patients with the general systemic infection and may be the factor which determines limitation of the disease. If the fever subsides and no evidence of progression is noted after seven days, restriction may be less rigid, but rest in degree should certainly be advised for another week.

*Convalescent Serum.*—Due to the indeterminate nature of the illness at this time, and the meager supply of convalescent serum usually available, administration of the serum is not generally advised, the recommendation being to await more definite indications. The majority of these patients will recover spontaneously, and yet I wonder, if sufficient convalescent serum were available, whether it might not be put to its best use at this time, injected in moderate amount intramuscularly as a preventive measure rather than a strictly therapeutic one.

*Injection of Whole Blood.*—Evidence obtained within the past few years by Aycock has demonstrated that the blood serum of many normal adults will neutralize the virus of poliomyelitis. The content of protective substances in such serum is generally less than that of serums from persons convalescent from true infantile paralysis. Persons who have lived continuously in large cities evidence this protective power more commonly than do persons residing in rural districts.

It is logical to assume that the injection of such whole blood may act prophylactically if used early in the disease, although its actual value has not been determined. In a rural district in Michigan where eleven cases of paralytic poliomyelitis were reported in the first two weeks of August, the use of intramuscular injections of whole blood was advised for patients suggesting systemic poliomyelitic infection. The idea was enthusiastically adopted by the physicians of the community. Only one case of paralytic poliomyelitis has since been reported. Although this can not be advanced as evidence of the efficacy of this procedure, the drop in frequency occurred at a time when the peak of the outbreak could have been expected, judged by experience in other parts of the state where the general decrease began about the middle of September.

*Lumbar Puncture.*—Spinal puncture has been performed in sufficient numbers to determine that it is of no value at this time. The spinal fluid will regularly be found normal. This observation was anticipated because an increase in the number of cells in the spinal fluid is the result of meningeal irritation, the symptoms of which are not yet present. The increase in cell count does not precede the symptoms of meningeal irritation.

*Communicable Disease Report.*—Since it is impossible to determine the identity of the disease at this time, the case should not be reported to the health authorities as one of poliomyelitis. Such reports only confuse the epidemiological interpretation of poliomyelitis currently prevalent. It should be considered as a suspicious case, with posting of a warning sign the recommended administrative procedure, rather than rigid isolation and quarantine.

### CENTRAL NERVOUS SYSTEM INVOLVEMENT IN EARLY POLIOMYELITIS

With the advance of the infectious process to meningeal involvement the most difficult time in the clinical management of poliomyelitis arrives. The problem demands exact niceties in judgment, and, above all, I should like to enter a plea that the physician here remain a clinician, guiding his procedures by clinical judgment.

Lumbar puncture at this time may be of inestimable value in permitting a diagnosis not otherwise possible, but if the indications are carefully determined there will be relatively few surprises when the spinal fluid is examined. There is danger of being too conservative and delaying spinal puncture and a confirmed diagnosis until the results to be expected from convalescent serum are less satisfactory. There is equal possibility of performing lumbar puncture prematurely and unnecessarily.

One is well guided to defer lumbar puncture until the indications are exact. The opportunity to intelligently interpret subsequently developing symptoms may be lost. If the lumbar puncture reveals a normal spinal fluid and later indications present for a second puncture, the simple traumatic irritation of the first puncture may lead to a slight increase in cells just sufficient to cloud the picture. There is the possibility that the first puncture may give a sanguineous fluid, particularly if the patient is young and not readily restrained. Such result makes valueless any subsequent lumbar punctures. Another consideration involves the possibility of initiating central nervous system involvement, as a result of drainage of spinal fluid, through permitting readier penetration of the virus through the choroid plexus. The available experimental evidence is contradictory, but the possibility warrants consideration. Since paralysis most commonly develops on the third day, it would appear that patients seen early with indefinite clinical symptoms present no great urgency for lumbar puncture. On the other hand, if the patient is seen late the necessity for lumbar puncture is usually apparent.

The guiding signs are stiffness or rigidity of the neck and stiffness of the spine. These are associated with headache, fever, and, commonly, nausea and vomiting. Muscular tremors and tenderness of an extremity are just as significant. If these things can not be demonstrated and there is simply an unconfirmed history of back pain or questionable resistance of the neck, I think one may well continue observation, deferring examination of the spinal fluid. If one or more of these signs is present, lumbar puncture should be done immediately.

### DIFFERENTIAL DIAGNOSIS

Before proceeding to examination of the spinal fluid in a suspected case, it is well to carefully review and evaluate the clinical evidence, to eliminate other conditions which may be confused with poliomyelitis.

Certain outstanding symptoms are of value in discounting the probability of infantile paralysis. Unnecessary alarm both to the physician and to the parents may be avoided by attention to certain cardinal clinical criteria. The possibility of poliomyelitis is commonly suggested by inability of the patient to properly use one of the extremities. This may actually be paralysis, or may be due to some other cause. Swelling of the affected part is generally sufficient to eliminate poliomyelitis. One should consider as the more probably underlying cause, osteomyelitis, epiphysitis, suppurative arthritis, and, particularly, acute rheumatic fever. All have been encountered in the practical differentiation of poliomyelitis.

Patients with infantile paralysis are many times first seen by the physician when weakness of some muscle group is already present. One should not neglect a careful history of the preceding illness. With poliomyelitis, paralysis develops within a relatively few days after onset. If paralysis occurs at a time far removed from the acute illness, a matter of many days, the condition is probably not poliomyelitis, but more likely a similar paralysis which occurs long after a severe infection with diphtheria.

The fever with poliomyelitis is low grade, commonly from 101 F. to 102 F., and not infrequently is even lower. At times the fever may be well elevated, but in general one may suspect any infection with a fever of 104 F. or more as probably not being due to the virus of poliomyelitis. If the fever is of a septic type, the suspicion is more definite that some other infectious agent is responsible. This one factor alone often permits differentiation from pyelitis, suppurative otitis media and typhoid fever. With all of these conditions and particularly

with pneumonia, young children not infrequently have meningismus. This state, with the high fever, usually suggests the proper interpretation.

Poliomyelitis not uncommonly has as an early symptom a mild nasopharyngitis. At times this infection may be more severe and resemble closely an ordinary tonsillitis. The reaction of the regional lymph nodes is an important consideration. Some enlargement of these structures can regularly be demonstrated in poliomyelitis, but a marked lymphadenitis is suggestive of some other condition, particularly tonsillitis and sometimes scarlet fever.

Emphasis has been placed on the general systemic nature of poliomyelitis and excellent evidence exists that the lymphatic structures are chiefly affected. At necropsy the mesenteric lymph nodes are prominently involved. Hyperplasia of Peyer's patches may be so marked as to suggest typhoid fever. Hyperplasia of the spleen is regularly present. These changes furnish the underlying cause for the abdominal tenderness, the nausea and vomiting initiating this disease. Abdominal tenderness in poliomyelitis is usually low grade and diffuse. Distinct local tenderness, particularly in the right lower abdominal quadrant, should raise very definitely the suspicion of an acute appendicitis. I have twice seen perforated appendiceal ulcer referred as poliomyelitis, and typhoid fever in five instances.

The following table represents an experience with 353 cases having an original tentative diagnosis of poliomyelitis. The conditions represented furnish practical illustration of the many problems which arise in clinical differentiation of this specific infectious disease.

Many patients of this group were dismissed with a diagnosis of nasopharyngitis. All presented a clinical picture corresponding to the systemic phase of poliomyelitis. Lacking progression to more definite manifestations, an anatomic diagnosis of nasopharyngitis was made.

TABLE 1

DIFFERENTIAL DIAGNOSIS OF POLIOMYELITIS

| Disease | Number of Cases | Per Cent Total Admissions |
|---|---|---|
| Poliomyelitis | 202 | 57.2 |
| Nasopharyngitis | 44 | 12.5 |
| Meningococcus Meningitis | 13 | 3.7 |
| Otitis Media | 11 | 3.1 |
| Tuberculous Meningitis | 11 | 3.1 |
| Tonsillitis | 10 | 3.0 |
| Enteritis, acute | 7 | 1.9 |
| Rheumatic Fever, acute | 6 | 1.7 |
| Pneumonia | 6 | 1.7 |
| Osteomyelitis | 3 | .9 |
| Typhoid Fever | 3 | .9 |
| Encephalitis | 3 | .9 |
| Influenza | 2 | .6 |
| Streptococcus Meningitis | 2 | .6 |
| Meningismus | 2 | .6 |
| Scarlet Fever | 2 | .6 |
| Hysteria | 2 | .6 |
| No Disease | 2 | .6 |
| Septicemia | 1 | .3 |
| Fracture of Skull | 1 | .3 |
| Traumatic Injury to Hip | 1 | .3 |
| Spastic Paraplegia | 1 | .3 |
| Cerebral Hemorrhage | 1 | .3 |
| Spastic Paraplegia and Nasopharyngitis | 1 | .3 |
| Subacute Bacterial Endocarditis and Lymphatic Leukemia | 1 | .3 |
| Traumatic Injury to Knee | 1 | .3 |
| Whooping Cough | 1 | .3 |
| Acute Catarrhal Jaundice | 1 | .3 |
| Epiphysitis | 1 | .3 |
| Tetanus | 1 | .3 |
| Migraine | 1 | .3 |
| Erysipelas | 1 | .3 |
| Pyelitis, acute | 1 | .3 |
| Hemorrhage, intracranial | 1 | .3 |
| Edema of Brain with Convulsions | 1 | .3 |
| Serum Sickness | 1 | .3 |
| Acute Pharyngitis | 1 | .3 |
| Acute Appendicitis | 1 | .3 |
| Status Epilepticus | 1 | .3 |
| Mastoiditis, chronic, with Multiple Pulmonary Abscesses | 1 | .3 |
| Total | 353 | 100.0 |

## MANAGEMENT OF POLIOMYELITIS—STAGE OF MENINGEAL IRRITATION

The statement of these principles of direct and differential diagnosis is a simple matter; their interpretation and application are oftentimes difficult. Actual case histories may suffice better than any other means to illustrate practical bedside application.

*Case 2.*—Patient William K., Case Number 18718, was a white boy six years of age who became ill on August 2, 1931, with symptoms suggesting a mild nasopharyngitis. His throat was more irritated than sore. The next day he felt relatively well. The third day was marked by a return of symptoms. He vomited once, complained of severe headache and had a fever of 101 F. Attacks of vomiting were again noted on the fourth day and the fever reached 102 F. He complained now of backache, but no real stiffness of the spine could be demonstrated. His physician had the impression of some increased resistance when the neck was flexed. Physical examination demonstrated no abnormalities of the reflexes; the same indefinite impression of possible rigidity of the neck was obtained. Lacking certain evidence, continued observation was recommended, with spinal puncture deferred unless progress of symptoms was noted. The temperature was normal the following morning, but rose to 100.2 F. in the

afternoon. The backache disappeared. No stiffness of the spine or neck developed. The sixth day found the boy apparently returned to normal health. The blood count showed 7,600 leukocytes with 68 per cent polymorphonuclears.

The course of this illness suggested poliomyelitis. Despite inexact evidence, I believe it was an abortive poliomyelitic infection. This history was suggestive of early meningeal involvement, but the physical signs were not sufficiently definite to warrant spinal puncture.

The next case history represents an infection somewhat more definite, but still with an element of doubt; truly a borderline case. No other situation in poliomyelitis offers comparable difficulties in diagnosis; nor so taxes clinical judgment as to management.

*Case 3.*—Delmay W., Case Number 18657, was a little girl four and one-half years of age who became ill September 20, 1931. She had fever and complained of headache and pain in the abdomen. She vomited. After this transitory illness she improved, with symptoms returning on September 23. On the 24th she complained of tenderness of the right leg. She was admitted to the hospital on that day with a fever of 101.6 F, pulse 126 and respirations 25. Physical examination revealed a well developed and nourished child, somewhat apprehensive but coöperative. She appeared acutely ill. The skin was warm and moist. There was no rigidity of the neck and no spine sign. The tongue was coated, but the mucous membranes of the throat were apparently normal. The heart and lungs were clear. The abdominal reflexes could not be elicited, but all others were present and active. There was no weakness or paralysis of any of the extremities, nor could tenderness of the supposedly involved leg be determined. No muscular tremors were observed. Blood count was 3,630,000 erythrocytes, hemoglobin 70 per cent, 5,300 leukocytes with 69 per cent neutrophiles, 30 per cent lymphocytes and 1 per cent transitionals.

The only abnormality elicited by physical examination was absence of abdominal reflexes; this associated with a history of tenderness of the right leg. In the absence of more concrete evidence, spinal puncture was omitted. No additional findings were noted that evening, but upon re-examination the following morning the knee jerks could not be determined, nor could the Achilles jerks be elicited. The abdominals, absent the day before, were now present, but sluggish. There was some slight resistance of the back to flexion, and the right thigh muscles were tender. Lumbar puncture was now indicated. Examination of the spinal fluid showed 10 cells per c.mm., and a faint trace of globulin. Sugar was present in the proportion of 157 milligrams per 100 ml. of fluid. Essentially no additional information was contributed. The findings were neither frankly positive nor negative.

One asks a difficult question as to just what to do under such circumstances. I would not consider it advisable to give serum intraspinously. The infection was so strongly suggestive of poliomyelitis that I advised administration of convalescent serum intravenously. The following day the temperature subsided to normal limits. The knee jerks could now be obtained by reinforcement on the left, but not on the right. There was no neck rigidity and no stiffness of the spine. Additional serum was not given, nor was another spinal puncture deemed advisable. Had there been stiffness of the neck or increase in the amount of resistance of the back, lumbar puncture would have been done, and in the event of an increased number of cells to significant limits, serum would have been given intrathecally. No paralysis has developed and the patient has completely recovered. The case was reported as poliomyelitis.

In the case next presented, the problem is not a difficult one.

*Case 4.*—Patient Albert W., Case Number 18698, was a youngster five and one-half years old, who became ill on September 26, 1931, with the usual symptoms of fever, headache and vomiting. After that he was well for several days, but on September 30 had a recurrence of headache and vomiting, and complained of pain in the back. On the third day of this second illness, October 2, he was admitted to the hospital with a fever of 102.8 F., pulse 140 and respirations 32. Physical examination revealed a child acutely ill. A vasomotor disturbance was indicated by hyperhydrosis and a blotchy appearance of the skin. The tache cerebrale was readily elicited. Mucous membranes of the throat were mildly injected, and the tongue was coated. No weakness or paralysis of muscle groups could be determined. The reflexes were present and equal, but the neck was moderately stiff and the spine sign was definitely and distinctly positive. Blood examination revealed 4,720,000 erythrocytes, 80 per cent hemoglobin, 14,300 leukocytes, 76 per cent neutrophiles, 24 per cent lymphocytes and 1 per cent metamyelocytes.

The clinical signs left no doubt regarding what should be done. The blood picture showed a different type of reaction, the leukocytosis associated with inflammation of a serous membrane, rather than the leukopenia accompanying lymphatic infection. Pain in the back, stiffness of the spine and rigidity of the neck gave clear cut indication for immediate lumbar puncture. A clear fluid containing 33 cells per cubic mil-

limeter was removed under increased pressure. Serum was administered intraspinously and intravenously. Spinal puncture was repeated the next day. In the absence of increased pressure, drainage of the spinal canal was done, but serum omitted. The temperature was normal on the third hospital day and has so continued. No paralysis or weakness of muscles developed. This case represents a clear cut instance of preparalytic poliomyelitis.

The management of patients with clinical signs suggestive of meningeal irritation may be briefly outlined as follows:

*Rest in bed* should be continued for at least three weeks with modified restriction past that period. Paralysis or weakness of muscle groups, if it is to appear, usually occurs within four or five days but may be delayed up to twelve days. Rest rigidly prescribed during this period is excellent preventive medicine.

*Close observation, preferably under hospital conditions.*—This will permit careful and continuous nursing and medical observation, including record of the temperature curve. Under hospital conditions spinal puncture may be delayed until such time as it will be most helpful. Close observation is particularly important with suspicious cases.

*Promote elimination* by the use of saline laxatives and intake of sufficient fluids.

*Lumbar Puncture.*—The indications should be carefully determined in accordance with the principles presented. With definite signs of meningeal irritation examination of the fluid should follow without delay.

*Serum Treatment.*—If examination of the spinal fluid confirms the diagnosis of poliomyelitis, convalescent serum should be given both intraspinously and intravenously at the time of the first puncture. The principle of limiting serum treatment by the intraspinal route to definitely confirmed cases is a commendable one. If the supply of serum is adequate, the use of serum intravenously with doubtful or suspicious cases is well advised.

*Intramuscular Injection of Whole Blood.*—If convalescent serum is not available this procedure is recommended, particularly for early and questionable cases. The results obtained can not be expected to compare with those obtained by the use of convalescent serum, but the procedure is logical.

*Communicable Disease Report.*—In the absence of definite confirmation of the disease in its preparalytic form by lumbar puncture, cases should not be reported as poliomyelitis. These are suspicious but not confirmed infections. With signs and symptoms compatible, and significant findings upon examination of the spinal fluid, the case should be reported as poliomyelitis regardless of whether or not paralysis is present or subsequently occurs.

## PARALYTIC STAGE IN POLIOMYELITIS

With every advantage of early diagnosis and serum treatment, paralysis will still develop in a certain percentage of cases, although to a lesser degrce. Some cases are first recognized because of paralysis. The necessity for discovering slight weaknesses in supposedly non-paralyzed cases has been emphasized. The treatment of paralysis, once established, presents distinct problems at various periods.

The treatment of acute paralysis while pain persists due to nerve irritation is one in which rest and prevention of deformities are the important factors. The rest should be scientifically controlled and absolute for those muscles involved. This is accomplished by the careful use of the various splints and frames prescribed by a physician trained in orthopedic surgery. Heat has proven of definite value, through increasing the circulation of blood to the affected member and by conducing to the comfort of the individual. This type of management should be conducted under careful supervision until all tenderness has disappeared. In the usual case this will be approximately six weeks.

When the tenderness has completely disappeared the patient enters a long period during which muscle function gradually improves. This process may require anywhere from six months to three years, and should be guided by a carefully planned program of muscle training and physiotherapy. This training is best entrusted to those skilled in this type of work.

Paralysis remaining after the full potentialities for muscle recovery have been realized, may require surgical intervention to counteract as far as possible the disabilities due to the residual paralysis.

SUMMARY

Changing concepts of the clinical nature of poliomyelitis have produced new clinical problems. Precise diagnosis no longer is limited to patients with paralysis. The disease may be determined in its preparalytic stage.

Recognition of poliomyelitis before paralysis, permits convalescent serum therapy under favorable conditions. Statistical results indicate a lower case fatality and fewer residual paralyses.

The clinical course of poliomyelitis has been differentiated into three stages: an initial systemic one, the preparalytic period of meningeal irritation and a final paralytic stage. Early diagnosis depends upon a healthy clinical suspicion and a lumbar puncture. The clinical features which serve to formulate that well grounded suspicion are discussed in detail. A program is presented for management of the disease in its several stages.

# TREATMENT OF INFANTILE PARALYSIS RESULTING FROM POLIOMYELITIS*

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The unusual prevalence of poliomyelitis this year makes discussion of its various phases especially interesting. A symposium on the disease is to be held tomorrow morning in the pediatric section. For this reason I have felt justified in presenting a brief résumé of the surgical aspects of the disease to this section. As an introduction, it will be well to go over the extraordinary advances that have been made during the past few years in our knowledge of the symptomatology, method of transmission and treatment of the preparalytic stages.

The infectious agent has not been isolated but we know that it is a filterable virus. We know that it is highly contagious and that it is directly passed from one individual to another probably through the nasal and pharyngeal secretions. We believe that only a very small proportion of individuals infected develop paralysis. It is probable that the great mass of the population, especially in crowded areas, have had the disease and established an immunity to it before reaching adult life. This explains the greater frequency of the disease in children. We know that it is a general systemic infection which, under certain conditions of lowered individual resistance and increased virulence, has a special predilection for the anterior or motor cells of the spinal cord or the cells of the cerebral bulb. Thus when paralysis occurs it may be of the skeletal-muscular type or of the cerebro-bulbar type. The latter is frequently fatal. The incubation period is from three to seven days, at the end of which time the first symptoms occur. These usually take the form of gastro-intestinal disturbances, often of very mild character, with a slight temperature and slight pharyngitis. Nausea and vomiting are sometimes present. Physicians and the families of patients should be keenly alive to the significance of these prodromal symptoms during the months of July, August and September, when poliomyelitis is most frequent. Following this period there are two to five days of complete absence of symptoms. Then appear the symptoms of the second stage. These are particularly referable to irritation of the central nervous system, fever, headache, nausea and vomiting, prostration, and, most important of all, pain and stiffness in the neck and back. This latter is almost pathognomonic and is often accompanied by Kernig's sign. It is sometimes so severe as to resemble cerebrospinal memingitis. The early recognition of this stage is of the most profound importance, because efficient treatment at this moment provides a guarantee against the development of paralysis. It is at this stage that positive diagnosis is made by spinal puncture. The spinal fluid shows an

*This paper was presented at the Surgical Section of the 111th Annual Meeting of the Michigan State Medical Society at Pontiac.

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increased and increasing cell count of from forty to several hundred cells. These are mostly polymorphonuclear cells and there is an increase of globulin in the fluid. The pressure of the fluid, too, is increased.

The moment that the diagnosis is confirmed by examination of the spinal fluid, two possible forms of treatment are open for our use. The first is the use of human immune serum as first described by Aycock. It is made by mixing the blood sera obtained from several known cases of recovered poliomyelitis. It is used by injecting into the spinal canal, preferably at the time of the diagnostic puncture, an amount of serum somewhat less than the amount of fluid withdrawn. Ordinarily this will be less than thirty cubic centimeters. It is best at the same time to inject a similar amount of serum intravenously. Ordinarily one injection is sufficient. If immune serum is not available the second form of treatment is of very great value. This consists of repeated spinal puncture carried out as long as there is any increase of pressure. Many cases have been saved from paralysis by this method.

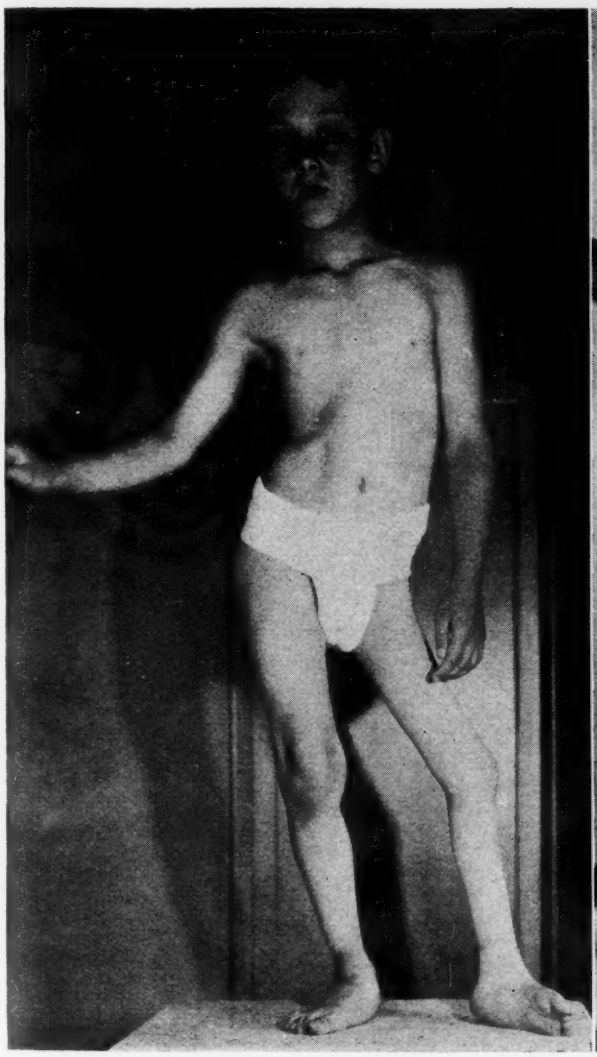

Fig. 1-A. Paralytic deformities before treatment.

Fig. 1-B. After treatment and correction.

In spite of the success of the treatments outlined above, paralysis does still develop in many cases, because the diagnosis and treatment have been delayed. The treatment of this paralysis is purely a surgical problem and may be divided into three stages.

I. Treatment of the acute paralysis while pain due to nerve irritation is still present (approximately six weeks).

II. Treatment of the stage of recovery during which muscle function gradually improves. This period may last any-

where from six weeks to three years.

III. Treatment by surgical operation to counteract, so far as possible, the disabilities due to the residual paralysis.

other form of trauma. No one can predict how great the restoration of innervation of any muscle through recovery of nerve cells will be. It may be complete or it may be

Fig. 2-A. Paralytic deformities before treatment.

Fig. 2-B. After operative correction.

Of these three stages probably the first is most important. Certainly more harm is done by ill-advised treatment during this period than in either of the others. It is a common misconception both of physicians and the laity that the acutely paralyzed muscles should be exercised to keep them from further weakness. Nothing is further from the truth. During the first stage while pain is still present, absolute rest with protection from stretching is essential. This is true because the muscle fibres which have lost their innervation are friable, and irreparable harm may be done by stretching or negligible. If the muscle fibres themselves are traumatized by massage, exercise or stretching while they are without innervation, they will have lost their power of contraction when and if their nerve supply returns. So the keynote of the treatment of the first stage of paralysis is rest, complete and absolute. This rest can only be obtained by efficient splints which hold the paralyzed extremity, every moment of the time, in such a position that the damaged muscles are relaxed. Such splints can be easily extemporized from materials found in any home, wire, padded boards, pillows, sand bags, any-

thing which will hold the paralyzed muscles in relaxation. A most useful adjunct to rest in this stage of the paralysis is some form of heat—hot water bottles, electric pads, electric lights arranged in some form of reflector, hot compresses or radiant lights. All are good and the heat from them should be applied to the damaged muscles two or three hours a day. The heat serves two purposes: first, it improves circulation; and, second, it adds to the patient's comfort. Massage in this stage is dangerous because the temptation is to use too much force and thereby damage muscle fibers.

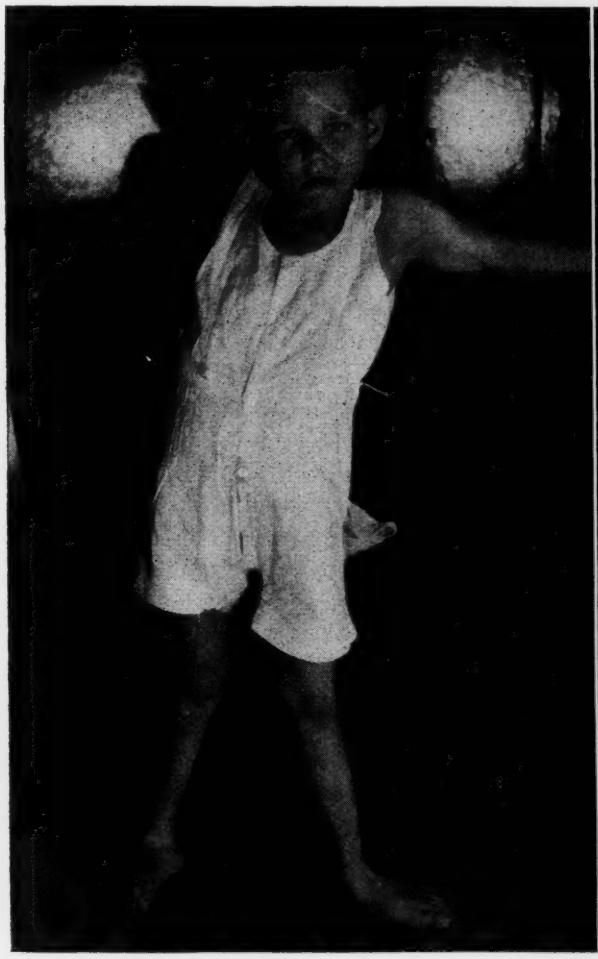

Fig. 3-A. Paralytic deformities before treatment.

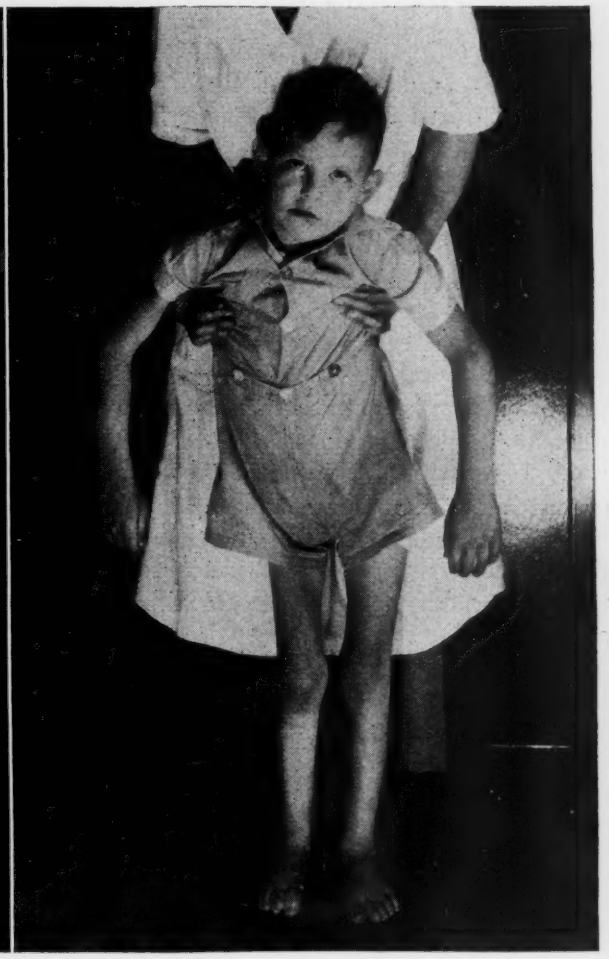

Fig. 3-B. After operative correction.

The second stage of treatment begins when pain has completely disappeared and muscle power has begun to return. The same cardinal principle obtains in this stage as in the first. That principle is the protection of the weak muscle from trauma, overstretching and overwork. No harm will ever be done by resting the muscles too much. Dr. R. W. Lovett, one of the greatest authorities on the treatment of infantile paralysis who ever lived, used to say that if he had only one form of treatment at his command, his choice would be absolute rest in bed. Fortunately this is not necessary, but the statement should be the constant controlling thought in the treatment of this second stage. The most important adjuncts to rest in this period are: first, heat to improve circulation; second, trained skillful gentle massage to improve circulation and promote growth (growth is retarded in the affected limb because paralysis prevents its normal use and because the paralyzed muscles do not bring the normal blood supply to the extremity); third, skillfully controlled active motion of the muscles through the patient's own efforts, the so-called muscle training. Muscle training aims to develop muscle fibres which are regaining their innervation without straining or tiring them. It can be carried out successfully only by the specially trained individual. If

such an individual is not available, reliance should be placed wholly on rest and protection obtained from splints and on heat and massage.

Muscle training in the hands of experts can be carried out advantageously, under the ordinary conditions of life. It undoubtedly has a valuable ally in the warm water pool. The underlying value of the warm water pool is the fact that the immersion of the patient's body in warm water does several things. It increases circulation through contact of the skin with the warm water. It reduces resistance to muscle contraction by floating the limb so that gravity is almost inactive. It increases the patient's willingness to carry out exercises, because it is fun just to be in the water. The spirit of the old swimming hold stimulates the imagination and the competitive spirit is aroused. Patients whose exercises are being carried out in a pool look forward to their periods of treatment with pleasure, which is in marked contrast to the boredom of the routine training in the gymnasium. For the individual a large bath tub provides a satisfactory pool. Where large numbers of patients are to be cared for by this method, the expense of the pool is often prohibitive.

The third stage of treatment begins when the improvement of muscle power, under muscle education, ceases. It is purely operative. It aims first to correct deformities which have resulted from inefficient treatment in stages one and two. Second, it aims, through muscle transplantation, to make strong muscles do the work of weak ones, thus restoring muscle balance. Third, it aims, by arthrodesis of joints and changes in bone architecture, to provide stable extremities, which the remaining strong muscles can control sufficiently well to make the extremities useful in the ordinary pursuits of life. The operations invented for these purposes are almost innumerable. The choice of the proper operations for the individual case and their arrangement in a consecutive rational program, which will produce the best ultimate results, are problems which tax the resources of the best trained surgeons. Frequently such a rational program will cover years of consecutive operative procedures, each depending on the success of its predecessors.

In such a paper as this, no attempt can be made to go into details, but certain basic principles can be stated. Operations undertaken too early are much more prone to failure than those undertaken late. Patience and long periods of observation are therefore of the greatest importance. Any type of operation, except the simple correction of deformity, should generally be postponed until growth is well advanced and bone has been substituted for cartilage. If a tendon transplantation which theoretically will help the individual case is undertaken before the bones are solid, growth may produce a reverse deformity that is most difficult to correct. Operations on the bones themselves necessarily damage the growth centers, and if they are attempted too early they lead to gross and intractable deformity, which often develops long after the surgeon has lost sight of the case. It is impossible to set age limits for the various operative procedures, but in general it is safest to employ braces to protect the limb or back until bony growth has approached its fulfillment. The most interesting of the newer developments of the late stage of infantile paralysis is the operative procedure for the lengthening of the damaged leg, which has not kept up with its fellow, in growth. This operation is successful both in the tibia and femur, but it should not be undertaken until the child is eleven or twelve years old. Increases in length of from one to three and one-half inches are feasible.

# RESULTS OBTAINED IN THE USE OF TOXOID AS AN IMMUNIZING AGENT AGAINST DIPHTHERIA

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The work of Ramon with anatoxin (toxoid) and the experience in Canada seems to show toxoid superior to toxin-antitoxin as an immunizing agent against diphtheria. Toxoid is prepared by treating diphtheria toxin with formalin until it has lost completely its toxic properties. It still retains, however, its antigenic qualities. It differs particularly from toxin-antitoxin in that the latter remains slightly toxic and also contains small amounts of horse serum. There are at least three possible valid objections to the use of toxin-antitoxin. In the first place, it may sensitize[1] children against horse serum or goat serum. Park, of New York, feels that the importance of this sensitization has been much exaggerated and practically does not exist. Since most of our antitoxins, for example tetanus and diphtheria, are horse serum preparations, goat serum toxin-antitoxin has beein introduced to avoid sensitizing patients against these products. Experience has shown that goat toxin-antoxin is only partially successful in this respect. Secondly, toxin-antitoxin given in doses of one cubic centimeter at weekly intervals for three weeks, produces immunity in only about eighty per cent of children. This leaves approximately one-fifth who, after they have been Schick tested, must receive another treatment series. Since a majority of parents have not yet learned the importance of following the treatments with the Shick test, at the proper interval, it is obvious that a considerable percentage who are thought to be immunized are really susceptible and may develop diphtheria upon exposure. In the third place, the effect of having children who have had toxin-antitoxin develop diphtheria, even though they have never been Schick tested to determine whether or not they actually became immune, is to destroy or undermine confidence in the procedure among all persons who come in contact with the case. Similarly, to discover that one out of five have to have the series repeated produces a bad psychologic reaction and increases tremendously the amount of work necessary.

The results reported from the use of toxoid have been so much more favorable than those achieved through the use of toxin-antitoxin that it was decided to run a series of children in the Child Welfare Clinics, keeping careful records so that the results could be compared with those reported. The following is a tabulation of results obtained from patients receiving two doses of 1 c.c. of toxoid (Ramon). These doses were given at intervals of three weeks and Schick tests were made every successive month until the patient became Schick negative or until six Schick tests were done. There was considerable loss during that period. The total number of cases having Schick and reaction tests was 433; the final number given toxoid was 202.

Only patients who were Schick positive, and were negative to the reaction test, were used. Five and five-tenths per cent of the 433 cases showed positive reaction tests. Patients chosen were between one year and six years of age, with an average age of two years seven months.

RESULTS OBTAINED FROM SCHICK POSITIVE PATIENTS WHO RECEIVED TWO DOSES OF 1 C.C. EACH OF TOXOID (RAMON), GIVEN AT THREE WEEK INTERVALS AND WHO WERE SCHICK TESTED EVERY MONTH THEREAFTER UNTIL A NEGATIVE TEST WAS OBTAINED OR UNTIL SIX SCHICKS WERE DONE

| Total No. of Cases | Neg at 6 Mo. | Neg. at 5 Mo. | Neg. at 4 Mo. | Neg. at 3 Mo. | Neg. at 2 Mo. | Neg. at 1 Mo. |
|---|---|---|---|---|---|---|
| 202 | 199 | 197 | 197 | 196 | 190 | 157 |
| | 98.5 | 97.5 | 97.5 | 97.0 | 94.0 | 77.7 |
| | % of total | % of total | % of total | % of total | % of total | % of total |

Age of patients—one year to five years, inclusive. Two patients failed to return.

At the end of six months 199, or 98.5 per cent, were Schick negative. At five months 197, or 97.5 per cent of the total, were Schick negative. At the fourth month 197, or 97.5 per cent of the total, were Schick negative. At the third month 196, or 97 per

†Dr. Barnes is a graduate of the University of Michigan Medical School of the class of 1920. He is at present Director of Child Welfare of the Detroit Board of Health. He is also in private practice, his practice being limited to pediatrics.

cent, were negative. At the second month 190, or 94 per cent of total, were negative; and one month after the second injection of toxoid 157, or 77.7 per cent of the total, were Schick negative. This evidence is in accordance with other results from the use of toxoid. The difference in these results from those we have gotten from toxin-antitoxin is unquestionably a significant one.

### CONCLUSIONS

1. 433 children were given the Schick test and reaction test. Of these, 24, or 5.5 per cent, showed a positive reaction test.
2. 202 Schick positive patients between the ages of six months and six years receiving two doses, 1 c.c. each, of toxoid (Ramon) given at three week itervals were Schick tested monthly until negative or until six Schicks had been done.
3. At the end of one month 77.7 per cent had become Schick negative and at the end of six months 98.5 per cent of the total had become negative.
4. No severe reactions were noted—the few occurring being mild and not differing materially from those experienced when toxin-antitoxin was used.
5. A preparation free from horse serum has been used, thus producing no sensitization in the patient against horse serum. A much higher per cent of children have been rendered immune with the treatment, thus making further treatment unnecessary in all but 1.5 per cent of the cases. The adoption of toxoid would result in a greater per cent of children being immunized by a single series of treatments, and would have a beneficial psychologic effect, since there would be fewer "treated" children developing diphtheria and fewer cases needing the series repeated.

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## FAMOUS MEN IN MEDICAL HISTORY

# WILLIAM PEPPER*

WILLIAM A. SODEMAN

The name of Pepper first appeared among the residents of Philadelphia in 1774, amid stormy times for the colonists, when Heinrich Pfeffer, an old Lutheran Strasburger, forsaking Germany for the new world, settled in the city of Friends. Nor was the name long submerged, for George Pepper, a son, early entered business, and, with the sagacity which marks our captains of industry today, amassed a fortune which in Philadelphia was second only to that of Stephen Girard. He contributed generously to science and education. In fact, so keen was his interest that his son, later to be known as William Pepper the elder, entered the field of medicine, graduating in 1832, the year of the Philadelphia cholera epidemic. A period of seasoning spent in Paris, and incidentally in the company of Oliver Wendell Holmes, prepared him for a practice in Philadelphia, where he, like his father, rapidly gained success, eventually occupying the chair of Theory and Practice of Medicine in the University of Pennsylvania. He cast his lot with Sarah Platt, a New Jersey Quaker, consummating a marriage which on August 21, 1843, brought to Philadelphia one of its greatest citizens, William Pepper the younger. Little did they know that future years would carry this son to the occupancy of his father's chair, to surpass his father, to lead the University out of the ill-managed, struggling position it held, and to elevate it to its place among the greatest universities of this country. It is the younger Pepper who concerns us here.

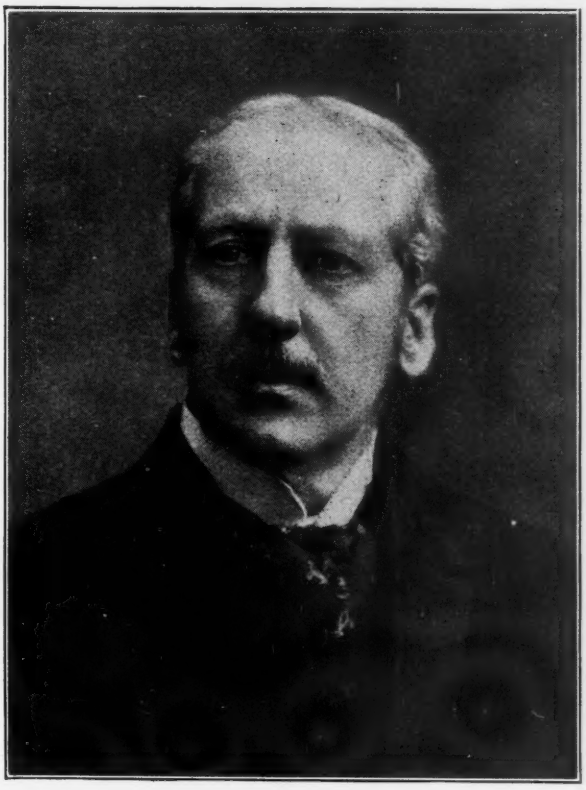
So full, so active, have been the later years of his life that the youth of Wm. Pepper, paled into insignificance, finds little place in his biography. Of himself he says, "I do not think I was at all a precocious child. I remember first going to school when nearly seven years old, ignorant of the very letters of the alphabet. Before this time,

*Read before the Victor C. Vaughan Historical Society, University of Michigan Medical School, March, 1931.

however, I had amused myself much with the elementary operation of arithmetic, especially performed in a mental way. . . . My childhood was a most happy one; blessed with a most kind and loving, but judicious, father, who, even when overwhelmed by the anxious cares of his profession, had always a fond sympathy with our childish pleasures; with a mother whose very presence, and still more tender smile and sweet, soft voice, were the fruits and proofs of most entire and constant unselfishness." Described as a bright, lovable, docile child, he developed into a boy of unusual mental vigor, self-command, and strong physique.

On September 8, 1858, he entered the Department of Arts of the University of Pennsylvania. Such a statement brings up an altogether different picture of a university than the modern mind conceives. Then the campus, on Ninth Street, held two plain buildings, one the college building, the other the Medical School. The University organization consisted of an Arts School, a flourishing Medical School, and a meagerly attended Law School. The freshman class in 1858 numbered thirty-two. Six professors taught the 125 art students. The Medical School, largest both in faculty and students, boasted ten professors and 409 students. The Law School, weakest of the three, consisted of three professors and 75 students. The library, it is said, was "open daily not less than two hours." This, then, was the University which Pepper entered, a school vastly different from the awe-inspiring institutions we have today. Discipline was lax, the prevailing habits of study very poor, and the students so young that most of them were incapable of appreciating the opportunities they daily neglected. The Civil War further depleted the enrollment, till the senior class of 1861 graduated about 25 students, among them Wm. Pepper, the second member of the class. He immediately entered the Medical Department, from which, on March 12, 1864, he received his M.D. degree, so that at the age of twenty we find him armed with a degree ready to enter the practice of medicine.

But it was not meant for young Pepper to start out alone so inadequately prepared. Study in Europe was impossible, but to stay on at the hospital, to profit by the experiences of his teachers, and to continue his studies, were demands he heeded. He became physician to the dispensary, and later was elected house physician. That he filled this position well is evidenced by conveyance to him of "the practice of house and use of the Library." The position of pathologist, lecturer in pathology, and appointments in other in-



WILLIAM PEPPER, 2ND

stitutions followed. He was very active and his physical and mental efforts knew no bounds. A colleague characterizes him for "his cheerfulness, hopeful disposition, his enthusiasm, and his alertness," and especially for "his bounding up and down stairs two and three steps at a time to and from his clinics." In 1870 he was appointed lecturer in Clinical Medicine at $400 per year. This choice brings to note his great love for internal medicine. He had no predilection for surgery, and, since his power of diagnosis seemed inborn, internal medicine naturally fascinated him.

The University at this time was on the verge of its great advance. Pepper, who till this time had passively taken interest in its development, now became an active supporter, little realizing that the fight for the advancement of the University would occupy the greater share of his time almost till death. The removal of the University to West Philadelphia was under discussion.

The hospital was closely associated with the medical school. Pepper eagerly took up the cause of medical education, so that at the age of twenty-seven years, we have him entering upon a career as builder of the University.

He compiled numerous arguments for justification of such a hospital. He calculated that from 1810 to 1870 medical students alone had spent over 20 millions of dollars in Philadelphia, establishing justification for the undertaking in a business way. He compared the hospital facilities of Philadelphia and New York. Philadelphia, with approximately 700,000 people, had 1,199 hospital beds nominally free. Actually only 309 of these were free to those who needed them. New York with 900,000 had 6,325 free beds. The pride of the city was aroused and jealousy toward New York was used to better the cause of the hospital. Pepper drew the political powers of Philadelphia behind him and used them to influence the city council to appropriate five and one-half acres for a hospital site. Nor did he stop with the people or the city government in his appeal, for he even approached the state legislature, which, in turn, promised $100,000. In those days such requests were unusual. Teaching hospitals were an innovation, a novelty which for the first time evoked the interest and support of the state's treasury.

Pepper's ability actually "to talk people out of money" shows itself in the case of Isaiah V. Williamson, who at the time bore the title of wealthiest man in Philadelphia. But the title was gained not in giving money away, but in saving it, so that no one expected his support in the hospital movement. Pepper, however, with an eye on the money, entered Williamson's office in the darkest and narrowest street in Philadelphia, eloquently described the needs and purposes of the new hospital in a twenty minute oration and rewarded the cause with a $50,000 gift, —later doubled. In this way, Pepper ferreted out all possible sources of donation, even resorting to the now well known partial payment plan, and crowned his efforts with success, when, on June 4, 1874, the hospital opened its doors.

The labors of developing a hospital and directing activities for the obtaining of funds seems a task large enough to completely occupy one man's time, but with all this struggle Pepper continued his professional activities. He worked enthusiastically in his practice, researches, and publications.

He was not a specialist but a general practitioner, even though since 1850 a tendency toward specialization had begun in the cities. His practice was extraordinary, not only in its volume, but also in its geographical extent. Patients came to see him from all over America and Europe, making demands upon him, great and at times almost beyond his powers. The high esteem in which he was held as physician is evident in the case of General Sheridan in 1888. Sheridan had become quite ill and Pepper was called in as a consultant. The Pennsylvania Railroad provided him with a special car, which he boarded every night at 11 o'clock, reaching his patient in Washington in four hours and returning to Philadelphia at 8 A. M. for his daily duties. Sheridan died, however, of a mitral stenosis complicated with pulmonary embolism. The size of his practice increased enormously after his appointment as Medical Director of the International Exposition, which was held in Philadelphia. He carried out his work in the Exposition with great success, for which he received the honor of the Order of St. Olaf from the King of Norway and Sweden. His name became known outside of Philadelphia, and with it a large increase of practice. Such were his honors at 33, an age when most physicians are yet unsettled in practice and very few have made a name for themselves. His success as a practitioner depended much upon his power of analysis. He had the capacity to compare, to distinguish, to define, qualities which would, and later did, bring him success in other fields of endeavor.

His services as a practitioner rested on his principles of treatment. His prescriptions were simple and he trusted much to rest and in getting the patient's mind back to normal. Nor did he forget the patient the minute he left the room. He remembered all. When in California, he sent notes to many a patient in small villages about Philadelphia. An unknown country doctor who called him in consultation would be surprised in a few days by a long letter commending his treatment of the case. In most discouraging and doubtful situations he could change the outlook. Sometimes, to be sure, bitterness and disappointment followed when the prognosis was not realized, but he did not mean to deceive, and he did more

good than harm this way, prolonging many lives and averting many hours of agony.

In the teaching of clinical medicine his great abilities are shown. He had no superior in this field, and in all his talks gave the impression of authoritativeness. Students as well as patients were attracted to him from all over America. His lectures were well given. However, due to numerous engagements, they were not always thoroughly prepared, and at times showed weakness, and perhaps lacked force. In all his teaching his Saturday clinics attracted the greatest attention. No matter how difficult the case which was presented appeared, he took it up and never failed, so his biographers say, to make a diagnosis.

As a writer he taught many more than as a lecturer. Never at a loss for the appropriate word, he expressed himself as clearly and forcefully as he spoke. "The Morphological Changes in Malarial Fever" was his first valuable contribution. Many other works, including several textbooks, followed. With Dr. Meigs, he wrote "Diseases of Children." His papers for the journals were numerous. "Local Treatment of Pulmonary Cavities," published in 1874, gained favorable comment from Austin Flint, although now in disrepute along with all types of injection treatment for lung pathology. Another work on tuberculosis is "Climatological Study of Phthisis in Pennsylvania," done with exhaustive research. His interest in pulmonary disease lies in the fact that his father, two brothers, and a sister died of it. He, himself, is said to have had three narrow escapes from such a death.

To carry on the extensive practice he had, to teach the classes he conducted, to contribute the writings he did seems more than enough to fill the days of any man. Indeed, it is more than most physicians do. But in Pepper's life it must make way for two activities considered his greatest achievements, the fostering of the development of the University of Pennsylvania and the promotion of higher medical education. Osler, in 1898, said, "Were I asked to name the most satisfactory single piece of work in Dr. Pepper's life I should say unhesitatingly that which is related to the promotion of higher medical education."

In Pepper's college days the University, except for the medical school, was entirely local. Standards were lax, the preparatory schools setting the admission requirements to the University. The board of regents and faculty comprised two distinct bodies, hostile to each other and seldom agreeing on anything. The trustees regarded the professors as clerks and employees rather than as teachers and guiding spirits of the University.

But through this arrangement, miserable as it was, some saw hope for reform. Pepper, himself, at graduation told a friend that the University would never be great until it had one head. Little did he dream that he was to be the first to fill such a post. Provost Stille tried to introduce many reforms, but without success. He advocated the elective system, already adopted by Harvard. He tried to instil a new spirit in the school, to raise it to the high plane of Yale and Harvard—but his hands were tied. He had no power, was not even a member of the board of trustees, and could not attend their meetings. He was a professor with another name, an executive without power, a situation constituting the most serious defect in the organization of the University. However, he did succeed in moving the University to West Philadelphia, and in his term the students increased 100 per cent, as did the debts. The Dental School and Towne Scientific School also were added. The campus as yet was unimproved and is described as a dreary waste, suggestive more of poverty than of higher education.

The trying problems after years of effort told on Stille's spirit, and on January 30, 1880, he resigned. Phillips Brooks declined the office. After much consultation Pepper was nominated. At first he refused, but reconsidered when the Provost was made presiding officer of committees. This action gave the University of Pennsylvania a new start, a true responsible head for the first time, and an organization which would permit it to advance. On February 22, 1881, Pepper was installed into office. In his address he advocated a new library, urged provisions for the education of women, and announced Joseph Wharton's endowment of the now famous Wharton School. He conferred the LL.D. upon James Garfield, then President-elect of the United States.

Immediately he set to work in his new position. His activities I can but mention. He traded the city of Philadelphia seventeen acres additional land for a few free scholarships; he amended the entrance requirements to the University and reorganized the

faculty into one large unit, subdivided into various groups representing the several schools. Heretofore each faculty had worked out its problems separately.

In 1877 he urged reforms in medical education and lengthened the yearly session to reach from October 1 to April 15. Several medical schools at that time had yearly schedules barely covering 10 weeks. With the lengthened term Pepper said, "The earnest and successful student of medicine must now devote his whole time for three years to acquire the knowledge of his profession." He added a voluntary fourth year, an entering wedge, so to speak, in extending the course to four years. Practical courses were added for graduate students. He also strengthened the law faculty, dental faculty, and added a Department of Veterinary Medicine, an old idea which Rush had expounded when lecturing there 75 years before.

Until this time also the University had neglected the wants of advanced students. Pepper commented on this lack of facilities as follows, "It is clear that one of the most important functions of the University is to provide every possible combination for such students as are desirous of pursuing their investigations far beyond the limits of the ordinary college curriculum." He effected the establishment of such education in the Faculty of Philosophy. He organized the alumni and took active interest in establishing an alumni association and championing college athletics, which for the first time was beginning to attract public attention.

His additions to the University continued. A school of Hygiene was established, land added to the University, a compulsory fourth year added to the medical curriculum, the entrance of women into higher education effected. The Wistar Institute, originated by Isaac Wistar to enrich comparative anatomy, Pepper considered the crowning triumph of his career. The Pepper Laboratory, a memorial to his father, is another of his personal contributions.

In his thirteen years as Provost, Dr. Pepper created thirteen departments and erected twenty buildings. The faculty increased from 90 to 300, and attendance from 800 to over 2,800. He added 40 acres to the campus and 4 million to the endowment funds; $500,000 of the money used came from his own pocket, all earned in practice.

His work at the University is great in whatever light it is considered, by extension and increase in the courses offered, by acquisition of land and erection of buildings, by increase in students and faculty members, by unification of the University and its correlation with the school system of Pennsylvania, and by its elevation to front rank among the great universities of the United States. All these accomplishments were won against greatest of odds, in the greatest of poverty. The financial weakness of the University necessitated a hand-to-mouth policy. Pepper looked to the future, threw burdens on future generations, who, he thought, would be more greatly inspired than his age. He assumed financial obligations as no other educator would. But he accomplished what Stille tried faithfully but hopelessly to do! He transformed Stille's school into a University of national reputation.

Civic affairs, too, entered into his activities. The late '80's found the library facilities of Philadelphia far behind those of other cities. True, many libraries, but most were closed corporations. Pepper, as the head of Philadelphia's greatest educational institution, was deeply concerned in such facilities. Through his influence, $225,000 was donated from his uncle's estate to a library fund. The Free Library of Philadelphia, true to form, was free not only in name, but also in fact, to all inhabitants of the city. Demands upon the library were overwhelming. Branch after branch was added, limited only by funds, until 1898 eleven libraries were in operation, loaning books to a million and a half borrowers in a single year.

The Philadelphia Commercial Museums also drew the patronage of William Pepper. The movement started at the University in 1893, when a museum was established to gather from all parts of the world information on trade, to exhibit samples of all manufactured goods sold in foreign countries, to help the American manufacturer in foreign trade, and to advance the standards of commercial education in the United States. Thus, the influence of William Pepper crept not only out of the state of Pennsylvania, but out of the United States into foreign lands, where interest in American History, doubled by ease of establishing relations with manufacturers, increased the heights of commercial and industrial prosperity.

Pepper's civic interest showed itself in a multitude of services rendered the city of Philadelphia, ranging from changing the attitude of the public toward higher education down to improvement of city water supply and other sanitary measures.

His last great attempt in the educational field, though it failed, is worthy of mention. For several years he exerted influence in Congress to establish a National University, planned as follows: a university to be formed in Washington, D. C., admitting only those holding the bachelor's or higher degrees. The Ph.D. and similar degrees only were to be conferred. The Library of Congress, scientific and art collections of Washington were to be used in teaching. The President of the United States was to be President of the University, which was to gain support, endowment, and appropriations from the federal government. Pepper appeared before Congress and spoke in behalf of his plan, but influences set up by certain of the eastern and northeastern schools which were afraid of being displaced in prominence by so powerful a school as would be created are said to be the cause of its defeat.

The effects of so full a life began to make their mark on Pepper. By March, 1896, the possibility of death faced him in the occurrence of several attacks of angina pectoris, which, however, he kept secret, attending his practice and work as usual. How fully his time was occupied is shown in one incident which occurred while he was giving a theater party. Three times during the performance he excused himself, twice to give formal addresses and once to enter consultation.

Rest became ever more urgent until, broken in health, he vacationed in California, far enough away from home to forget his labors. On his second trip there, on July 28, 1898, an anginal attack came on which could not be stopped, his first attack in four months, the last one having occurred during his lecture upon that disease. The common opinion was that overwork killed him. To quote the Mayor of Philadelphia, "So swiftly did he run that he fell before he reached the goal."

With his death his greatness was voiced everywhere. "Philadelphia's first and foremost citizen," are Tyson's words. "The greatest Philadelphian citizen since Franklin," said many. He had many characteristics which make for great citizens. His unselfishness was something many could not understand. How he could do all he did merely for public good his enemies could not conceive. He treated the world as a friend, and used his foes as well as his friends for his purposes. His capacity to ignore insults and injury helped him toward his greatness.

He understood man and methods. He planned well, counseled well, and wrote well. Few men are so much a success in so many fields of labor. Commerce, business, civic leaders, public welfare workers, as well as medicine and education all claim him as one of their leaders. His career is all the more surprising when considering that the calling of a physician is not the kind to be led toward commerce, business and such varied public interest.

Much of what he accomplished he did for Philadelphia. He thought not of the historic old city, but a New Philadelphia, greater in public works, richer in hospitals, in schools, in libraries, in art, commerce, and so forth. The women of Philadelphia, and of the whole United States, owe him a great debt of gratitude for his interest in education for women. Although at the time he became Provost he backed education for women, he did not feel that the University could take the initiative. But later, women played such a part in his success as an educator that he remarked, "Ten years ago I was skeptical as to the large share to be played by woman in public and official life of a dominant nation; now I grow more and more convinced of her necessity."

To those of us outside of Philadelphia his chief importance lies in his influence upon medical education. As a writer of textbooks and as a lecturer he taught many, influenced many far above the average teacher. He contributed little in the form of new discoveries, it is true, but his efforts in lengthening medical courses, introducing clinical teaching closely linked to theoretical considerations, broadening the medical student's grasp upon the basis of his training, and leading the country in developing the modern medical school—these efforts, to repeat, although not heralded with the enthusiasm shown a radical change or new discovery in medicine, silently built a foundation for medical training in the United States which is of inestimable value and which will outstrip the spectacular as time grinds on.

# MICHIGAN'S DEPARTMENT OF HEALTH

C. C. SLEMONS, M.D., Dr.P.H., Commissioner
LANSING, MICHIGAN

## POLIOMYLETIS IN MICHIGAN

The outbreak of anterior poliomylitis in Michigan this year reached greater proporsions than any previous outbreak of this disease in the state. This is so, if we may judge by the number of reported cases as compared with the reported cases in previous outbreaks. In 1916, there were 598 reported cases. In 1924, the number was 647. These two years remained the highest until 1931, when the total reports at the end of October were 1,076. It may be, however, that, due to better diagnosing and reporting this year, the number of reported cases is not an accurate measure with which to compare this outbreak with former ones.

If we consider the number of deaths, we still are not sure that we have an accurate measure of comparison. The greatest number of deaths in a previous outbreak was 141 in 1916. The number accounted for up to October 1, 1931, is 77. However, at the present writing, not all of these death reports have been received and tabulated by the Michigan Department of Health. The virulence of the epidemics may differ. Furthermore, the convalescent serum used in the outbreak this year appears to have been instrumental in lowering the number of deaths and cases left with paralysis.

The epidemic of poliomyelitis subsided rapidly. The number of cases reported weekly, beginning July 25 and to the end of October, is as follows:

| For the week ending | |
|---|---|
| July 25 | 9 |
| Aug. 1 | 13 |
| Aug. 8 | 17 |
| Aug. 15 | 33 |
| Aug. 22 | 51 |
| Aug. 29 | 93 |
| Sept. 5 | 107 |
| Sept. 12 | 114 |
| Sept. 19 | 170 |
| Sept. 26 | 138 |
| Oct. 3 | 112 |
| Oct. 10 | 74 |
| Oct. 17 | 46 |
| Oct. 24 | 41 |
| Oct. 31 | 28 |

The greatest number of cases reported in any one day was 50 on September 15. Cases have been reported from 72 of the 83 counties. The eleven counties from which no cases have been reported are: Alger, Arenac, Baraga, Crawford, Dickinson, Huron, Iosco, Iron, Lake, Ogemaw and Oscoda.

The consultant service, which was provided for in a plan set up by the Michigan Commission on Infantile Paralysis and financed also by the Commission in indigent cases, was discontinued October 20. Since this date, consultant service as well as other care needed for indigent infantile paralysis cases has been provided by the local authorities in the same way as in any other communicable disease.

The Commission (through the Michigan Department of Health) continued to provide convalescent serum on the basis of the same clinical criteria as heretofore.

The Commission endeavored to be of service in combating the outbreak in the following ways:

1. Dissemination of general information and advice to the public and more especially to the schools (largely through the press).

2. Education of physicians as to the disease (bulletins, circular letters, lectures, clinics).

3. Expert consultant service making it possible to confirm early diagnosis at bedside by spinal puncture and microscope, thus enabling a good percentage of cases to receive serum treatment in the preparalytic stage. (Division of state into districts with regional consultant for each.)

4. Serum:

   a. Canvassing of state for persons who, having had the disease previously, were willing to provide blood for serum (press, Michigan Crippled Children's Commission, physicians, nurses, health officers and others).

   b. Organization of bleeding clinics and collection of blood (health workers, physicians and nurses).

   c. Processing of blood into serum ready for distribution (Michigan Department of Health Laboratory).

d. Distribution of serum to local consultants (Michigan Department of Health).

That you may be reminded again of those organizations coöperating in the Commission, the list is given here:

Michigan Department of Health
State Medical Society
University of Michigan
Children's Fund of Michigan
W. K. Kellogg Foundation
Crippled Children's Commission
Detroit Department of Health
Wayne County Medical Society
Orthopedic Board
Detroit College of Medicine and Surgery

It will be some time before all data regarding the campaign and that pertaining to the epidemic can be collected. It will be longer before these data can be analyzed and published. But already we have much information and many reports indicating the effectiveness of the work. We are convinced that quite a few lives have been saved and much crippling prevented.

C. D. BARRETT, M.D., C.P.H., *Director,*
Bureau of Epidemiology.

## FROM THE DEPARTMENT OF LABOR

We desire to call the attention of all medical men to the following section of the labor laws of the State of Michigan, same being Section 1, Act 119, Public Acts of 1911 (Section 8613, C. L. 1929):

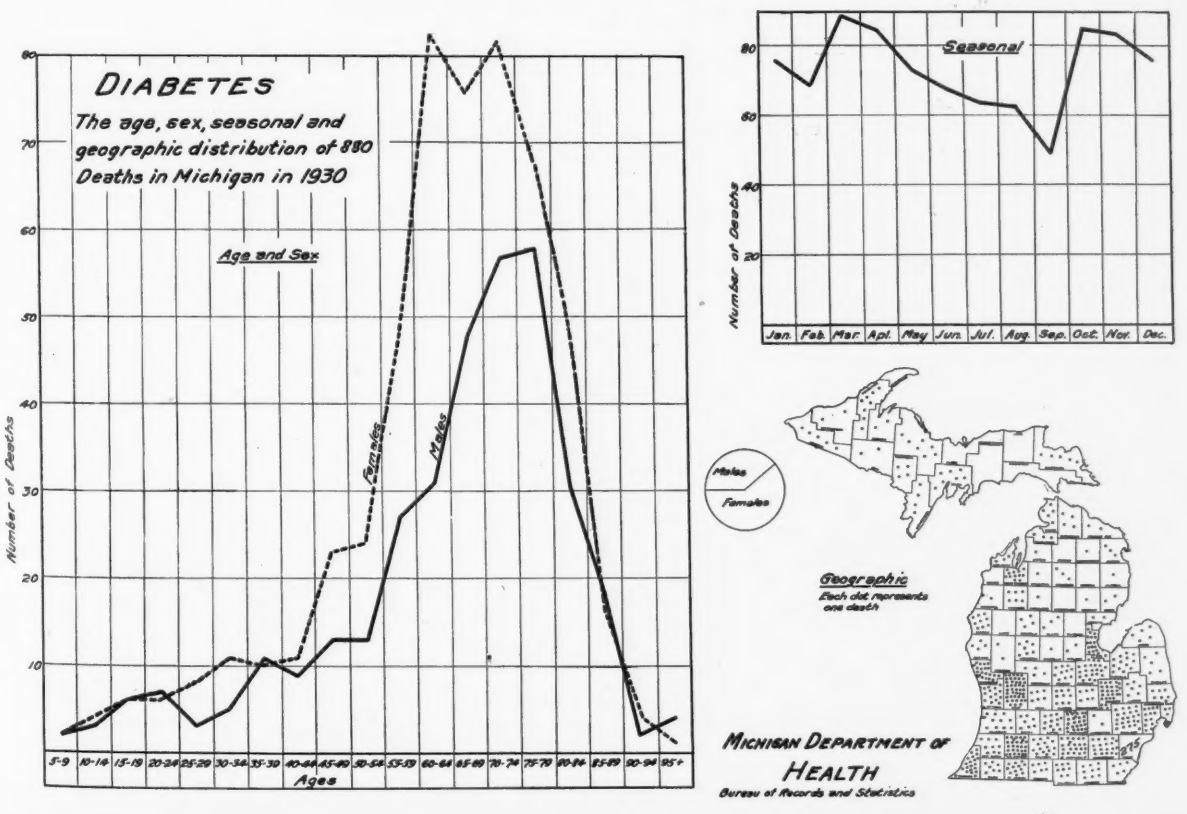
"Every physician attending or called upon to treat a patient whom he believes to be suffering from poisoning from lead, phosphorus, arsenic or mercury, or their compounds, or from anthrax, or from compressed air illness, contracted as a result of the nature of the patient's employment, shall send to the state board of health, who shall transmit to the commissioner of labor, a notice stating the name, post-office address and place of employment of the patient, the length of time of such employment, and the disease from which, in the opinion of the physician, the patient is suffering."

## ANNOUNCEMENT

Beginning January 1, 1932, the Michigan Department of Health will distribute diphtheria toxoid for active immunization against diphtheria. The manufacture and distribution of toxin-antitoxin will be discontinued.

This change will be made because toxoid is a more stable biologic product than toxin-antitoxin, and because it assures a higher percentage of immune children in a susceptible group.

A reprint of the Department's circular for



physicians on diphtheria toxoid and its administration follows:

"Diphtheria Toxoid is used for active immunization against diphtheria. It is an especially useful preparation for young children.

"It is a non-toxic product, prepared and tested in our laboratories in accordance with regulations of the United States Public Health Service, by treatment of diphtheria toxin with formaldehyde to a point of detoxification so complete that 5 maximum human doses shall cause no local or general reaction when injected into guinea pigs weighing 300 grams.

"As distributed from these laboratories, Diphtheria Toxoid is a clear, straw-colored liquid and should not be used if cloudy.

"Diphtheria Toxoid given coincident with Diphtheria Antitoxin or within four weeks after Diphtheria Antitoxin has been administered is neutralized. Wait four to six weeks after immunizing dose of antitoxin before beginning treatment with toxoid.

"All children over the age of six months and under six years may receive Diphtheria Toxoid treatment.

DOSAGE

"Three doses of 1.0 c.c. are given three weeks apart. The dose is the same for children as for adults. For infants under one year of age, one-half of each dose should be given. Diphtheria Toxoid should be given intramuscularly. Immunity develops within a period varying from six to eight weeks after the last injection. Older children and adults, because they are less readily immunized, may receive four doses. The development of an active immunity is determined by the Schick test at the end of three months.

REACTIONS

"Experience so far has shown that reactions seldom follow the injection of toxoid in children under six years of age and are rare in those under ten years. In older children and adults, local and even general reactions may occur. Such reactions consist of induration, with an area of redness extending for several inches around the site of injection together with malaise, headache and fever. These symptoms disappear in two or three days.

TESTING FOR REACTORS

"It is recommended that all persons over ten years of age be tested with the reaction test, which consists of Diphtheria Toxoid diluted 1 to 20, and is supplied with each package of toxoid.

"Inject 0.1 c.c. of this diluted material intracutaneously into the forearm. If within three days the area of redness around the point of injection is not larger than one-half inch in diameter (12 mm.) no severe reaction is to be expected. If the reaction is larger than this, Diphtheria Toxoid should be given in one-fourth of the regular dose."

## RÔLE OF COMMUNITY CLINICS IN MENTAL HYGIENE

According to George S. Stevenson, New York, the mental hygienist in developing his preventive and early treatment program is confronted with a more complex situation than the physical hygienist in that his subject, man-as-a-whole as contrasted to his parts, is a freely moving agent which is constantly changing its relationships and inducing responses from people on a variety of grounds. Prevention in mental hygiene work hence has been sought not only in medicine but also in criminology, social service, pedagogy and religion, and a successful community effort must coördinate these varied approaches. Mental hygiene consequently depends on the willingness and capacity for coöperation of a number of co-equal groups, no one of which can assume too much authority. This entails an extensive improvement in professional education so that the teacher will teach better, the social worker and public health nurse will do their jobs better, the judge will plan better for his cases, the minister will guide better, and the physician will see his problems with their broader implications. This last means a new shading, not an added subject to medical education. The mental health activities of a community cannot get ahead of these advances in professional training. The clinic can provide service to the few cases whose mental hygiene needs exceed the capacities of other agencies and pending the development of these capacities. Beyond clinical service, it carries a responsibility for community education and organization. The mental hygiene of a community is a compound whole community job in which the clinic provides leadership and a limited specialized service.—*Journal A. M. A.*

## CAUSES OF FAILURE IN TREATMENT OF VARICOSE VEINS

Géza de Takáts, Chicago, states that today it is no longer necessary to fight for the principle of injection treatment, but rather to emphasize the possible errors and mistakes that are frequently made in a type of procedure which is so easily accessible to both physician and patient. There is hardly anything more instructive than to go over the possible mistakes in diagnosis, the indications and the errors in selecting the proper time and proper type of treatment and in choosing the best solution for the individual case. By avoiding errors in the technic of injections, together with the prevention, early recognition and adequate treatment of sloughs, and by adhering to a systematic follow-up and treatment of recurrences, a physician will doubtless improve his results and render a valuable and economically important service to the community. Under mistakes in diagnosis, in indications, in the type of treatment, in the technic of injections, in the selection of the proper solution to be injected, in the prevention and treatment of untoward reactions, and in the after-treatment and follow-up of patients, the author enumerates a few of the most common mistakes in the treatment of varicose veins.—*Journal A. M. A.*

## REMOVABLE INTERNAL FIXATION IN FRACTURES

According to W. B. Carrell and P. M. Girard, Dallas, Texas, removable internal fixation has merit in selected cases of fracture. They suggest some modifications to the method which make it applicable to a wider range of conditions. In several varieties of fractures, fixation is adequate, and, by hinging the plaster at the joint, motion may be instituted immediately after operation. With external fixation in plaster, the pin has a distinct advantage in controlling completely the tendency for angulation due to the contraction of muscles. This is observed regularly in the middle and upper third of the femur. The method is so easily and quickly applied that it changes a rather major operation to one of less exposure, less trauma and, therefore, within the sphere of a greater number of surgeons. Three different devices are described that are used in accordance with the type of fracture. The plan of removable fixation is not proposed to meet all requirements in an operation in fractures, but in selected cases the authors have found it adequate, easily applied and worth a place in the armamentarium of the fracture surgeon.—*Journal A. M. A.*

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DECEMBER, 1931


*"I hold every man a debtor to his profession, from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavor themselves, by way of amends, to be a help and ornament thereunto."*

*—Francis Bacon*

## EDITORIAL

### DR. CHARLES GODWIN JENNINGS HONORED

The honorary degree of Master of Arts was conferred upon Dr. Jennings at the eighty-second annual convocation of the University of Michigan Medical School. The inauguration of a movement to recognize the meritorious work of some prominent member of the medical profession in this State took place at the annual fall convocation of 1930 when the honorary degree of Master of Arts was conferred upon Dr. C. B. Burr. It is an honor which is appreciated by the person fortunate enough to have it conferred upon him, more than refined gold. And we may also add, when the selection is so carefully made as has been in the two instances thus far, the granting of the honorary degree is also a credit to the University.

The selection of Dr. Jennings is a happy one. The doctor has had a long and distinguished career as internist. Not only in the active practice of his profession has he served his generation well, but his career has been almost equally noteworthy as a medical educator. Dr. Jennings has never ceased to grow mentally. He has been for thirty-five years a teacher of medicine in the Detroit College of Medicine. Many generations of students, as medical classes go, have gone out under his instruction and inspiration and have acquitted themselves with credit. Most of the great clinicians have been teachers. Contact with younger minds stimulates the medical teacher to his best. Teaching makes for clearness in thinking.

It is our privilege to publish in this number of the Journal the address delivered by Dr. Jennings on the occasion of the annual fall convocation before the president, the faculty and the students of the medical school and also members of the board of regents and guests. Dr. Jennings began the study of medicine fifty-six years ago. This long period makes him a participator in as well as a spectator of the notable developments that have been made in medicine during the most fruitful period of its history. *Quorum magna pars fuit.*

In his address he reviews briefly the medical discoveries during the past half century, emphasizing the importance of almost constant post-graduate study for him who would keep abreast with the advancement of medical and surgical knowledge. He contrasts the position and the standing in the community of the physician of the fourth quarter of the nineteenth century with that of the physician of today. Reference is made to the criticism of medical service of today, particularly by the lay press, and the problems that will confront the young graduate on the threshold of his career. The advancement in medical science during the past half century has necessitated an increasing cost of medical care. Some solution of this problem must be found. Doctors' fees amount to less than one-third of the total cost of medical service. The problem, then, consists in effecting economies in the remaining two-thirds. The means sug-

gested by Dr. Jennings, namely philanthropy, health insurance, state aid, are worthy of consideration and we would add a fourth, unemployment insurance.

Dr. Jennings defines what he considers the field of the specialist and that of the general practitioner. The general practitioner of today should be the "master specialist" of them all and should be as thoroughly trained as the best members of any other specialty. But even today there is no adequate provision for such training. He should be not only the confidential adviser of the family but he should be a master in the art of diagnosis, particularly of disease in its incipiency. His role should partake in part at least of practitioner of preventive medicine.

The solution of medical problems, whether scientific, social or economic, should be accomplished by the medical profession and not by philanthropists, politicians or the socially minded outside the profession. The address was timely, since those entering upon medical practice will have a great deal to do to bring about the adjustment of scientific medicine to social life.

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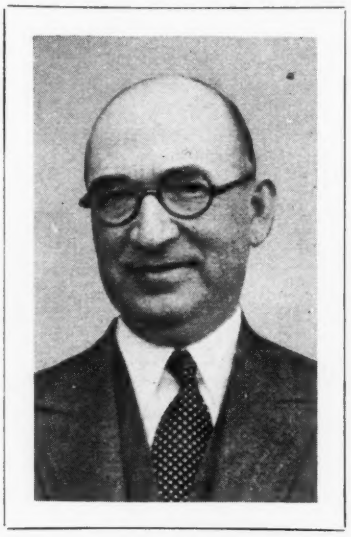
## DR. J. D. BRUCE, VICE PRESIDENT OF THE UNIVERSITY OF MICHIGAN

Dr. J. D. Bruce has been appointed by the Board of Regents of the University of Michigan to the position of Vice President in charge of University Relations. The University has always maintained a high standard of scholarship in its extramural as well as in its intramural courses. It has not permitted its work to be cheapened by correspondence courses of doubtful value merging towards secondary school standards. It has sought to meet the demands of adult education in its University Extension as well as courses in post-graduate work given both within and outside the University. Never in its history has the University served the residents of the State more efficiently than at present. The student's graduation does not terminate his connection with his alma mater, unless he so wills it. An opportunity is given the graduate in medicine, law, education or engineering to continue his education as intensively as he may wish. This likewise applies to graduates of any other university who may be residents of Michigan. It is to meet these requirements more adequately that the new position has been created.

The choice of Dr. Bruce is fortunate. He has had a long experience in this state, first as country practitioner, after graduation in 1896 from the Detroit College of Medicine and Surgery, then as assistant in medicine to Dr. George Dock of the University Med-



DR. J. D. BRUCE, VICE PRESIDENT OF THE UNIVERSITY OF MICHIGAN

ical School, 1904-05. He located later in Saginaw, where from internal medicine his practice gradually became surgical. In 1925 Dr. Bruce was appointed director of the department of internal medicine of the University, a position he held with a high degree of satisfaction to all concerned. Three years ago he was made Director of the Department of Post-Graduate Medicine, a position which brought him into intimate contact with the medical profession of the State. He has been councillor of the Michigan State Medical Society since 1923, first for the 8th district and since 1925, the time of taking up his residence in Ann Arbor, for district 14.

From personal experience extending over half a life-time Dr. Bruce has become acquainted with the life and educational requirements of individual doctors. He knows the country doctor as well as his city confrere. And in his capacity of Director of the Department of Post-Graduate Medicine he is equally acquainted with the academician. He has proved himself an educator of ability and vision.

## THE USES OF ADVERSITY

The second year of the so-called depression is drawing to a close; we wish we might say that the depression is also coming to an end. The situation in which the world has been placed illustrates the old adage, one touch of nature makes the whole world kin. Never has the interdependence of the different elements of human society been more keenly demonstrated. The best minds in every walk of life have been occupied with attempts at a solution of our economic and social problems and none has given the matter more serious attention than has the profession of medicine. Never has there been a time when patience, steadiness and confidence were more urgent. In spite of financial losses, the greatest things in life, the priceless things that money cannot buy, are with us still—good health, the loyalty of one's family, the allegiance of one's friends. We have known members of our profession who have lost heavily, yet they have preserved a cheerful manner. They have turned their clouds about to show their lining. Reverses, after all, serve only to show one's true character. The resourceful man refuses to be turned down. We are reminded of the exiled duke in "As You Like It":

> "As the icy fang
> And churlish chiding of the winter wind,
> Which when it bites and blows upon my body,
> Even till I shrink with cold, I smile and say
> 'This is no flattery', these are counsellors,
> That feelingly persuade me what I am,
> Sweet are the uses of adversity,
> Which like the toad, ugly and venomous,
> Wears yet a precious jewel in his head;
> And this our life exempt from public haunt,
> Finds tongues in trees, books in running brooks,
> Sermons in stones, and good in everything.
> I would not change it."

The experience of the year just closed will, in the minds of many, effect a change in the conception of human values. This of itself will be a good thing. Whether prosperity is just around the corner we do not know. According to an old stoic proverb, men are tormented by the opinions they have of things rather than by the things themselves. One's comfort and ease of mind will be in proportion to his philosophic outlook on life.

The President and officers of the Michigan State Medical Society join in wishing the readers the brightest and happiest New Year they have ever seen.

## FARADAY

August 29, 1931, was the one hundredth anniversary of the discovery of electromagnetic induction by Michael Faraday. This was one of the greatest discoveries of the nineteenth century and its effect upon the human race cannot even yet be estimated. Faraday, who was one of the greatest of experimental scientists, was in his youth apprenticed to Sir Humphry Davy, also a noted scientist with many revolutionary discoveries to his credit. On being asked what he considered his greatest discovery, Sir Humphry immediately replied, "Faraday." Faraday was the son of a blacksmith. He was an extreme individualist in his work. He never had a research assistant and he was the founder of no school. In this, however, he was not unlike a number of other British scientists who might be mentioned. Charles Darwin, Herbert Spencer, Sir William Crookes, Thomas Henry Huxley did their work independently. This seems to be a characteristic of British genius.

Faraday belonged to a small restricted religious sect known as Sandemanians. This connection greatly curtailed his social life for it seems that a man could not be both Sandemanian and social. Thus we see Faraday ignored social life to a very great degree and spent his energy in research.

One hundred years ago, when at the height of his powers and reputation, Faraday dropped all commercial consulting work. He could have earned $25,000 a year in fees, but this he turned down for his work, and remained at the Royal Institution on a salary of $500 a year, which, being supplemented by lecturing and fees from non-commercial organizations, made his income a little over $2,500, the major portion of which was given to charity.

A member of the Royal Society, he refused to attend the Society meetings because he disapproved of the influence in the Society of persons of merely social eminence. He considered the organization should be restricted to scientists only. Faraday found it impossible to get on with people. Though he succeeded pretty well in controlling his temper, he could not conceal his impatience with the scientific ineptitude of many with whom he came in contact.

Of course it was impossible one hundred

years ago to have any idea of the potentialities which the dynamo has since opened up. There are few departments of medicine, even, which have not been affected by Faraday's discovery. The electric current has been utilized for the illumination of the body. Without Faraday the discovery of the X-rays and electrocardiograph, both based on induced currents, would have been impossible.

## PROGRESS

We are living in a progressive age. This raises the question as to what progress really means. Did the people of every age of human history deem their times progressive? Are we advancing at a uniform pace or in a series of waves that advance and recede and then advance a little farther? Perhaps never before in the history of the race was it more necessary than now for thoughtful minds to indulge in reflection on this subject. A number of books have appeared within recent years; in this country a composite work entitled *Whither Mankind*, and a sequel, *Towards Civilization*, in which the answer is implied; both are under the editorship of the American historian, Charles Beard. Another, published in England, entitled *The Idea of Progress* by Bury, is a more philosophical book. Bury begins his study by going back to the ancients, particularly to the Greeks. The Greeks even of the Golden Age had no conception of progress as it obtains today among Europeans and Americans. They held to the theory of world cycles whereby each cycle repeated in the minutest detail the immediately preceding cycle. The *n*th cycle would be numerically different from the first but in other respects identical. The Greeks had a term *moira* which designated the prevailing state of mind or outlook. It meant a *fixed order* in the universe. This idea was passed on to the Romans so that it may be accepted as expressing the state of mind of the ancients. While both Greeks and Romans achieved greatness, those other nations that looked upon them with authoritative reverence did not progress, which accounts for the thousand years and more of Cimmerian darkness following the decline of Rome.

* * *

During the middle ages the prevailing ideas were not in keeping with the modern ideas of progress, for the medieval thinker, or rather believer, considered that human history would be complete if the world came to an end during his lifetime. The same may be said of many simple minded Christians of today. The gradual betterment of human society did not concern them so much as a life to come—individual immortality.

"All medieval thought," according to Coulton, the learned scholar of the middle ages, "is characterized nominally at least by the conviction that each man has a soul to save and that therefore salvation is the main end of every human being, not a distant ideal but the most practical duty. The world fabric might crash at any moment; what was the use of beginning a long chain of facts and inferences? The painful lack of historical sense and scientific observation or experiment during this long period was partly due to the predominating otherworldly attitude of mind among many of the greatest thinkers."

The medieval doctrine of original sin precluded any gradual process of development of the human race. Roger Bacon, whose name has been associated with the experimental method, has been said to have originated the idea of progress. The weight of evidence, however, is against this assumption, since Bacon was influenced to a great degree by his times. One writer (Bury) claims that medieval pessimism as to man's mundane condition was darker and sterner than that of the Greeks. The middle ages were characterized by great mental activity, but the result was little or nothing of permanent value. Progress was impossible. According to Taine, men went through the motions of marching, but they were only marking time. Carlyle spoke of the medieval philosophers as "spinning dervishes gyrating with amazing swiftness but ending where they began." Strange as it may seem, the shortest chapter and most barren in medical history is that dealing with the thousand year period following the death of Galen (200 A. D.).

* * *

It took the European countries about three centuries to evolve from the mental attitude of the middle ages to that of the modern world. This is practically the pe-

riod known as the Renaissance, which may be called the preparation period. During this time we have self confidence restored to human reason as well as a growth of the idea that human life on earth possessed a value independent of a life beyond the grave, all due in a large measure to a return to the thinkers of ancient Greece and Rome. In other words, men attempted to enter into the spirit of the Greeks without slavishly copying them. Greek philosophy and Greek medicine constituted new points of departure. This is evident in our own domain of medicine. We have the anatomical researches of Vesalius which undermined the prestige of Hippocrates and Galen, and later the work of Harvey, which opened the way for the modernizing of medicine. The same may be said of the minor post-Vesalian anatomists. Men of science were at this time in the dawning twilight. It was an age of skepticism which produced such men as Montaigne and others who might be mentioned. Emulating the example of the ancient Greeks is a vastly different thing from following them slavishly and bowing to them as authorities in the realm of thought.

The idea of progress implies that civilization has moved, is moving and will move in a desirable direction. According to Bury, progress of humanity belongs to the same class of ideas as personal immortality; it is true or false, and, like personal immortality, it cannot be proved either true or false. Belief in it is an act of faith.

* * *

Francis Bacon, contemporary of Shakespeare, taught that the end of all knowledge was utility. In other words the purpose of knowledge was to increase man's happiness and to alleviate his sufferings. "The end of the sciences," said he, "is the endowment of human life with new inventions and riches." Francis Bacon, however, believed that the world, like man, had its youth, its maturity and old age, a belief that is inconsistent with progress.

The idea of progress, originating as it did during the seventeenth century, developed with the growth of science. Without science in its broadest sense it is difficult to conceive of progress. Before the seventeenth century, men had philosophy and literature, science of a kind, and commerce, but the progressive betterment of human society did not enter their minds. Jerome Cardan, himself an early modern physician, declared that three scientific contributions to mankind—the mariner's compass, gunpowder and the printing press—were greater than all the ancients had to offer. The mariner's compass made safe to navigation the uncharted seas and thereby tended to make the world a single community. Gunpowder, even though it has facilitated war on a scale hitherto unknown, has certainly had its effect upon nations. The printing press has been a most powerful agent in the influencing of human thought. Science has been advancing almost without interruption for the past three centuries; sometimes its pace has been very slow, so that there have been periods that have been barren of results; at other times, as at present, it has proceeded at a very much quickened rate, but it has been always forward. According to Bertrand Russell, one hundred and fifty years of science have proved more explosive than five thousand years of pre-scientific culture. It would be impossible to enumerate the contributions of science to civilization. A hundred years ago Faraday made his great discovery of electro-magnetic induction which gave us the dynamo. He was in a sense the father of electrical science. He passed off the scene with hardly a realization of what the fruit of his great discovery might some day be. One recalls the story of his exhibition to Gladstone of a small piece of electrical apparatus. The great British minister of finance asked him of what use it was. "Some day you will be able to tax it," was Faraday's reply. Scientific discoveries have certainly carried their burden of taxation. The faster the evolution of science the greater do we progress. When science halts, progress marks time. Progress then is conceived as material advancement. The humblest citizen today has conveniences and mechanical servants that the most affluent were denied a half a century ago. And yet man is not satisfied. This suggests the question: Is it possible for him to be satisfied with material things?

* * *

The expression that necessity is the mother of invention is somewhat trite but

nevertheless true. "Progress," says Bury, "is not an accident but a necessity." Today we are confronted by a world-wide depression in which millions of people are in the ranks of the unemployed. They are real sufferers and cannot be considered in a state of happiness in spite of the fact their lot is cast at a time when science is at its zenith. Every age is confronted with problems and it is one of the functions of science to attempt to solve them, but perhaps religion and philosophy might lead.

An important factor to consider is the urbanization of the western world. This applies to both Europe and America. Time was in the memory of us who are past middle age when the cities were recruited from the country. The professions forty years ago drew their members largely from the farm. Even today a large number of doctors sixty years and over were reared in the country. The recruiting of our profession from the farm has almost entirely ceased for reasons that are well known. The country was a reservoir of vital human material. There is a marked tendency for the human stock to become exhausted by the artificial way of life and the social activity of the city. Modern urbane man has ceased to have any contact with the soil. Even the agriculturist has become affected with the feverish activity of the city so that the whole population becomes in a state of nervous tension. This involves a biological change that must sooner or later affect the character of the race itself.

Whether man will be able to adapt himself to the present condition which is so radically different from the past cannot be foretold with any degree of certainty; that is, whether the new urban industrial civilization will become exhausted or whether it will reach as one writer* puts it, "a new stage of social equilibrium in which the vital forces of society are scientifically safeguarded and preserved from the deteriorating influences of the new conditions." We don't know. With scarcely three centuries to its credit, or discredit, depending on one's point of view, one cannot predict whether progress will be continuous or not. It is a matter which, like personal immortality, as Bury maintains, must be rejected or accepted as an act of faith.

*Progress and Religion. Christopher Dawson.

## REMINISCENCE

The *Detroit Free Press* is wont to run in its editorial department selected news items of the particular date fifty years ago. On November 8, 1881, appeared the following news item, "The Michigan College of Medicine has rented the premises at 225 Antoine St. and will utilize it as a school for the training of nurses." This was the first nurses' training school in the state, we are told. Two years later the nurses' training school of Harper Hospital was founded and the two eventually became merged. The number of nurses in training was at first very small, not more than five or six.

Early in November of this year (1931) the death of R. H. Fyfe, shoe merchant of Detroit was announced. Mr. Fyfe was much interested in the training of nurses and contributed substantially to it during this early period. One of the successful practitioners of the state happened to visit Detroit and looking at the flag at half mast over the Fyfe Building remarked that were it not for R. H. Fyfe he would not have been able to pursue the study of medicine. Mr. Fyfe was accustomed to inquire about the finances of needy students and was liberal in employing them as clerks in his store during their off hours.

## THE DOCTORS PROTEST

(The Manchester Guardian Weekly)

The teaching profession, the navy, and the police have all found forcible means of expressing how they feel about economy cuts. Now it is the doctors' turn. The panel doctors seem to be in pretty general rebellion against the Insurance Act Committee of the B.M.A. for accepting a cut of 1s. in the capitation fee. A movement is on foot to set up a new organization to look after the interests of the insurance doctors. The original fee was at the rate of 11s. for every patient on a doctor's panel. In 1922 it was reduced to 9s. 6d., in 1924 to 9s. However unwelcome these former cuts may have been, the falling cost of living tended to reduce their grievousness. The present change cuts down the fee to a very low figure at a time when the general cost of living is rising and when the burden of taxation has almost reached the breaking point.

## TO AVOID MALPRACTICE SUITS

1. Keep full records of every case, covering both hospital and office care and including telephone consultation.
2. Do not spare X-rays.
3. Avoid, as far as possible, carrying on your practice by telephone. Telephone diagnoses and treatment can lead to serious mistakes and misunderstanding.
4. Fill out death certificates accurately and completely. These may be used as evidence with serious consequences.
5. Do not have an autopsy performed without

a written permission signed by the nearest relative.

6. Avoid careless and ill-founded opinions, particularly in regard to the results obtained by other physicians.

7. Defer pushing collections on a dissatisfied patient who may bring suit rather than pay his bill. He has only two years from the date of the last treatment in which to make a claim, while your bill is not outlawed for six years.

8. Make friends with your patients by your honesty and fairness towards them, for the every-day patients make up your jury and their friendliness to you means their friendliness to the profession.

9. Carry adequate protective insurance.

*—The Bulletin of the Hennepin County Medical Society.*

## SANTA CLAUS

Weel, Hallowe'en time is o'er an' Thanksgi'en is past. Noo we're waitin' for th' Christmas season tae come wi' a' its blithesome array an' happy ado.

A'm a'ways gled tae get past oor halloween. Ye ken there's a big swamp atween ma office an' ma hoos an' it's no verra nice traivellin' through there nichts, especially at halloween when a' th' firebugs an' frogs are tryin' tae catch ain inither, an' howlets come oot an' ghaists a'maist grab ye by th' airm.

Oor thanks gaed oot th' year for sae mony guid things that a' th' Doctors hae. We hae a' th' regular things, such as health an' good roads an' taxes an' bills an' rent an' a' thae things an' besides, this year, we hae mair apples an' cider an' mair pumpkin pies, than for mony a year. We are no minded tae gi' oor thanks on anly th' ain day.

Noo we're comin' tae Martinmas time. Th' birthday o' th' graundest man wha wis ever gi'en tae this auld world. We mak a great day o' this, wi' veesits tae oor freens an' dinners tae oor relations an' presents tae th' bairns, an'—mon!—we hae sic a guide time, we lang tae hae th' day come. Ah always hae a rale auld man tae come tae seen me. He's a fine auld chap. A' th' bairns love him, aye! sae does granny. He gies me a' ma neckties. He's a'ways th' same happy, rollickin', sympathizin' auld gentleman, an' every body loves him,—aye!—Every body loves Santa Claus.

WEELUM.

## MAKE THIS A DAY

Make this a day. There is no gain
In brooding over days to come;
The message of today is plain,
The future lips are ever dumb.
The work of yesterday is gone—
For good or ill, let come what may;
But now we face another dawn.
Make this a day.

Though yesterday we failed to see
The urging hand and earnest face
That men call Opportunity;
We failed to know the time or place
For some great deed, what need to fret?
The dawn comes up a silver gray,
And golden moments must be met.
Make this a day.

—KALENS.

## POOR WILLIE!

"Little Willie, from the mirror,
Licked the mercury all off;
Thinking in his childish error
It would cure the whooping cough,
At the funeral, Willie's uncle
Sadly said to Mrs. Brown,
"Twas a chilly day for Willie
When the mercury went down.'"

# MEDICAL ECONOMICS

## MEDICAL CARE FOR VETERANS IN LOCAL HOSPITALS

Interview by DR. ANGUS MCLEAN, Detroit

Saving hundreds of millions of dollars of American taxpayers' money and insuring that every local community is materially benefited by the provisions of the new Federal Act rendering medical and hospital services to veterans of the World War, is the plan of the American Medical Association, according to Dr. Angus McLean, of Detroit, a member of the Legislative Coöperative Committee of the American Medical Association working with the American Legion. Dr. McLean, together with Dr. Louis J. Hirschman, outlined the new law and the American Medical Association plan for proper administration of the law at a meeting of the Cadillac Post of the American Legion in Detroit on October 19th.

"The last Federal Congress inaugurated the policy of rendering medical and hospital benefits to veterans of the World War with non-service connected disabilities," stated Dr. McLean. "This means that veterans with medical troubles which are connected or not connected with service—happening 'Over There' in 1918 or 'over here' in 1931—are entitled to free medical treatment by and under government supervision. This means that the federal government has the privilege of providing hospital beds to take care of veterans, and this, according to the Veterans Bureau itself, means 129,859 beds to meet the needs of veterans of all wars. The cost of construction of government hospitals has been $3,500 per bed. At present there are fifty-three veterans' hospitals with a capacity of 25,940 beds. The cost of constructing the 103,939 additional beds would be, therefore, $363,786,500. The government would undoubtedly have to float a bond issue to raise this staggering sum, and the interest charges alone at 3 per cent would amount to $10,913,595 per annum.

"After the hospitals are constructed," continued Dr. McLean, "then we must think of the cost of equipment, which is a very large item, the exact figures being unobtainable. But expensive equipment, such as X-ray apparatus, would quickly run into a hundred million dollars, we feel sure.

"Next comes the cost of maintenance, which is $4.42 per day or $1,613.30 per annum per bed. This represents a charge of $209,501,524 to be paid by the taxpayers each and every twelve months.

"Then we must think of the cost of the professional staff to man these hospitals—the physicians, surgeons, nurses, orderlies and administrative staff. The Veterans Bureau figures this at $151.56 per bed per annum. In round numbers this means a total of $19,681,430 will be spent on the staff in government hospitals every 365 days.

"But we are not finished yet. If the veteran is examined and ordered to a hospital, there is his transportation to be taken into consideration. The Veterans Bureau tells us the average cost of transportation to and from a hospital is $30.58 per veteran admitted. This would reach the figure of $4,545,000 based on only 129,859 admissions. The sum total of all these costs represents the almost inconceivable figure of $700,000,000.

"The Federal Government has decided by law that veterans of the World War with non-service connected disabilities shall receive these medical benefits, although this policy was inaugurated over the opposition of the American Medical Association, which felt that the veteran with a disability obtained in service should be given every care and the maximum of consideration, but that veterans uninjured in service should not expect the government to pay

for disabilities and illnesses incurred today—some thirteen years after the war. But now that it has been legislated by Congress and is on our Statutes, it is our duty as citizens to coöperate by doing all that we can to keep down the expenditure of the taxpayers' money.

"The problem now at hand is to see that a plan is formulated which will entail the greatest saving in this huge governmental expense without in any way diminishing the benefits to the individual veteran. In line with this, the American Medical Association has suggested a plan of disability insurance benefits with the following provisions:

"'First, the creation of a Bureau of Disability Insurance in the Veterans Bureau as now constituted.

"'Second, the issuance of a disability insurance policy to each veteran, with disability benefit clauses as follows:

"'(a) The payment of a weekly cash benefit during a period of total disability, and

"'(b) The payment of liberal hospital benefit sufficient to cover the hospital expenses of a veteran during a period of hospitalization for any disability. Such benefits to be paid to a veteran on satisfactory proof of total disability, and

"'Third, such other provisions as are necessary for the proper administration of the act.'

"The plan in actual practice would work out as follows: the disabled veteran would apply to the Bureau in his own city and be referred to a local physician for a medical examination. These examinations would take place in the private offices of individual practitioners, who would be paid for the service. Should the examiner find evidence of disability, the veteran would receive a weekly cash benefit for medical and hospital care. The veteran could either stay at home (if his illness permitted) under the care of his family practitioner, or go to a hospital of his choice, and in surgical cases choose the surgeon he desired. Under the A. M. A. plan the veteran would be the greatest beneficiary; he could employ his own physician and choose his own hospital and have his medical care in his own city, not fifty or one hundred miles away from his family; he would receive personalized attention from his own physician in whom he has always placed the greatest confidence; if he contracted a sudden illness he could be given emergency service without waste of time in transportation—and some emergencies cannot await transportation without serious consequence; during his incapacity his weekly benefits would be sufficient to pay for his medical services, with something left over. The veteran's family would benefit because any remaining portion of his weekly benefits would go towards its maintenance."

It is stated that there are 470 veterans in Michigan who have had physical examinations and have been recommended for hospitalization but who cannot be accommodated owing to lack of available beds in government hospitals. A sound argument, says Dr. McLean, for employment by the government of existing hospitals.

"The local hospital would benefit because it would be filled, and I understand there are some 319,000 empty beds in hospitals right at this very moment. The local physician would benefit by this plan. Finally, the government would greatly benefit by the A. M. A. proposition because it would be saved the initial outlay of over $363,000,000 for hospitals, which, statisticians show, would be frozen assets in less than twenty years; again, the plan can be put into immediate operation, without waiting a year or two for the erection of hospitals; moreover the government would be saved over $19,000,000 for professional staffs, and over $209,000,000 for maintenance charges, not to speak of the enormous cost of transportation and equipment which would be eliminated."

Dr. McLean and Dr. Hirschman were supported by the Legionnaires, who agreed to present this plan to their local Congressmen. Outline of the A. M. A. plan has been presented to American Legion posts in Wayne, Macomb and St. Clair counties.

—From an Interview in the *Wayne County Medical Bulletin,* Nov. 3, 1931.

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## DR. ARISTIDES AGRAMONTE AS I KNEW HIM.*

WALTER J. CREE, M.D.
DETROIT, MICHIGAN

It has been my custom for a number of years to pass a couple of months in Cuba each winter. There I have met a number of prominent physicians in public and private life whose cordial welcome has made my visits very pleasant, and among them I have met the late Dr. Agramonte. In February, 1930, at the meeting of the Pan-American Medical Association at Panama the doctor presented a paper on the "Present Conception of the Etiology of Yellow Fever." Aboard ship on the return to Havana, he told a number of the doctors present some of the events of his early life up to the time he was appointed on the Yellow Fever Commission. His description of the methods used in pursuing the study of the disease and its elimination were made vivid by his self-effacing manner, always referring, as he did, to what his confrères had accomplished. It was a wonderful tropical night at sea and all those who had the opportunity of hearing his quiet impersonal talk will not soon forget the man who helped to rid the tropics of the yellow scourge. The cleaning up of Cuba and Panama made three countries inhabitable for the white man and also made it possible to build the canal without the great loss of life suffered by the French.

At the time of the American Medical Association meeting in Detroit in June, 1930, at the dinner of the Medical Veterans of the World War, Dr. Agramonte addressed the assemblage on the subject of the study of yellow fever by the commission of which he was a member. Helen Warrum Chappell, formerly of the Metropolitan Company of New York City, as one of her numbers sang the beautiful Mexican song "Estrellita" (Little Star). This pleased the doctor very much as the name of his daughter is Estrella. The doctor had a desire to visit Canada and I had the pleasure of entertaining him and Cuban Consul Barranco on foreign soil.

I met Dr. Agramonte again in Mexico City a short time before his death. At the Pan-American meeting he read a paper on "Some Aspects of Tropical Medicine." He took a very active part in the sessions, but to me there was something wrong with my friend. He seemed to lack the sprightly manner so noticeable on former occasions. The delegates at their last meeting decided on New Orleans as the next place of meeting in 1932, and this was a source of great pleasure to him as he had proposed that place. That same night I met him and he said:

"Goodbye, Cree, I hope to see you next year."

I informed him that it was possible that I would be there in November, 1931. He was pleased and said:

"So much the better, we will have a fine visit."

It was not to be, as he died on the 18th of August at New Orleans.

Dr. Agramonte was born in Camaguey, Cuba,

*This appreciation of the late Dr. Agramonte of yellow fever fame was written by Dr. Cree at the request of the editor. We are sure that our readers will appreciate this little human interest story.

June 3, 1869, and died August 18, 1931. He was brought up in New York City and graduated from the College of Physicians and Surgeons (now Columbia University) in 1892, a classmate of Dr. Jesse Lazear, who was with him on the Yellow Fever Commission. In 1898 when the Spanish-American war broke out he enlisted and was appointed Acting Assistant Surgeon. He had charge of the Army Medical Laboratory after the occupation of Havana. He was professor of bacteriology in the University of Havana in 1900 and subsequently a member of the National Board of Health of Cuba and for a time secretary of the Health and Charity Department. He moved to New Orleans in 1929 and became professor of tropical medicine in the State University Medical School. He was the recipient of many degrees and honors—Honorary M.B. from the University of Havana, Sc.D. from Columbia University and many other degrees and decorations from foreign countries, and medical associations in this country. Congress voted a life-long pension to the members of the commission and a gold medal. At the time of his death the medals had not come from the mint but were issued shortly after that time.

The passing of Dr. Agramonte was a shock to me but I am happy to say that I have known him as a friend.

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## COMPLETE STRICTURE OF COMMON AND HEPATIC DUCTS

Waltman Walters, Rochester, Minn., reports five cases in which purposeful external biliary fistulas were transplanted into the stomach or duodenum for the relief of biliary obstruction due to stricture of the common bile duct, so extensive that there was not enough normal duct to enable anastomosis into the duodenum. In two of the cases the results have been excellent. There has been no evidence of further biliary obstruction. One of these patients was operated on two and a half years ago. Two of the patients had good results. They have been relieved of the constant jaundice and itching and have improved in health and gained in weight, but at times have had indications of either stasis of bile or cholangitis evidenced by transient jaundice or mild pain. One patient died the fifth day after operation, from hepatic insufficiency and intra-abdominal hemorrhage. She had been jaundiced for years prior to the transplantation of the fistula.—*Journal A. M. A.*

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## SOURCE AND ROLE OF URINARY PROTEIN IN NEPHRITIS

William A. Thomas, Chicago, believes that the clinical picture of nephritis is due largely to generalized and specialized tissue damage, to disturbance in tissue metabolism and to mineral balance rather than to lack of renal function and retention of waste products and water. The kidney, normal or diseased, exerts a selective action on the proteins circulating in the blood, retaining those normal to that body and excreting those foreign to it. Artificial nephritis and uremia may be produced in dogs by the intravenous injection of a 5 per cent solution of sodium chloride. The urinary protein in these artificial uremias is at first pure tissue protein. When the tissue protein has been split to a toxic stage, it is combined with serum protein, which combination constitutes a foreign protein and is excreted as such. The presence of serum protein in the urine in nephritis is a detoxicating mechanism.—*Journal A. M. A.*

# DEATHS

## DR. E. L. PARMETER

Dr. E. L. Parmeter of Albion died at his home on Sunday, Oct. 18th, after over two months' illness. Dr. Parmeter was born in Concord Township on November 9th, 1851. He was a graduate of Albion College and later the Bennett Medical College of Chicago, from which institution he was graduated in 1876. Dr. Parmeter had practiced in Albion more than fifty years, having located in Albion in 1877. He had never aspired to any civic office but had been a member and at one time president of the Board of Directors of the Union Steel Products company since its organization over twenty-five years ago. He was a charter member of the Duck Lake Golf Club and Albion Chapter of the Three-Quarter-Century Club. He is survived by his widow, Mrs. Sara Elizabeth Parmeter, and one son, Dr. Rollin Parmeter of Detroit. The funeral services were held on October 20th, when burial took place in Riverside Cemetery.

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## DR. DAVID R. LANDSBOROUGH

Dr. David R. Landsborough of Stephenson, Michigan, died at his home on October 28, 1931. He was born at Seaforth, Ontario, on Dec. 10, 1871. He graduated from the University of Toronto in 1901, in which year he located at Daggett, Michigan. He was President of Menominee County Medical Society and also at one time of the Upper Peninsular Medical Society. Dr. Landsborough took an active interest in the civic affairs of his town. He was President of the Board of Education and Vice-President of the Bank of Daggett. The doctor belonged to the rugged type of country physician whose passing is regretted. He died in what may be considered the prime of an active life, namely at the age of sixty years.

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## TOO MANY "DROP-DEADS"

In speaking before the Congress of the American College of Surgeons at its recent meeting, Dr. Charles H. Mayo, of The Mayo Clinic, said:

"The world has moved ahead so fast as regards material civilization that man has almost, for the moment, got behind in his power of adaptation. Every other hospital bed in the United States is for mentally afflicted, insane, idiotic, feebleminded or senile persons. That's worry. It is worry that breaks down the brain, not work as such.

"Today it may be said that we are dying as individuals and not in droves. The world, through science, has been made a safe place in which to live. All the mass-destroying diseases have largely come under control, and now each adult must fight his own individual battle; usually he does not brook any interference with his own mode of living. . . .

"There are too many 'drop-deads.' The drop-deads occur in the city. They may die on the golf links, trying to do thirty-eight holes to show they are all right, but they really occur in the city. Farmers haven't the time to drop dead. . . . Unless you have been brought up to work in early life, do not get out and try to do stunts after you are 50 or 60 years old. . . . Please do not disregard disagreeable sensations or pain. Disagreeable sensations are practically always the first evidence of derangement of function."

# GENERAL NEWS AND ANNOUNCEMENTS

Dr. J. C. Foshee, Grand Rapids, spent the first two weeks in November visiting the New York clinics.

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The Special Committee on Foundations and Clinics held its first meeting in Jackson on November 5th. Dr. W. H. Marshall, Chairman, presided.

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Dr. H. D. Chadwick of Detroit was elected President of the Michigan Tuberculosis Association at the annual meeting held at Ann Arbor on Oct. 16.

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Volume XXX (1931) Journal Michigan State Medical Society contains 980 pages, being exactly twenty pages more than that published during the year 1930. This is the largest volume in the history of the Michigan State Medical Society.

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On the afternoon of October 28 a number of the friends of Dr. Cyrenus G. Darling, emeritus professor of surgery at the University of Michigan, assembled at his home for the unveiling of a bust of Dr. Darling which was presented to the University by a group of Dr. Darling's old students. The presentation was made by Dr. Novy and accepted by President Alexander G. Ruthven. The bust was the work of the artist, Mr. Carleton Angell, of Ann Arbor.

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At the annual meeting of the Detroit Roentgen Ray and Radium Society, Dr. John Murphy of Toledo was elected President for the ensuing year, Dr. E. R. Witwer, Secretary-Treasurer, and Dr. Rollin Stevens and William A. Evans were appointed a program committee. The X-ray and Radium Society were entertained at dinner by the X-ray Department of Harper Hospital. The program consisted of an illustrated paper by Dr. Evans on Developmental Anomalies of the Vertebral Column.

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Dr. H. H. Hammel of Tecumseh, who holds the rank of major in the United States army medical corps, has completed a six weeks' course for field officers at Carlisle, Pa. Officers attending the school were from 13 states. Dr. Hammel was presented the Bresanhan saber for having the highest standing in the school, for proficiency in leadership and military bearing. The saber was presented by Gen. Munson, commandant of the school. Dr. Hammel is an ex-president of the Lenawee County Medical Society.

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The Wayne County Medical Society, which for some time has considered a change in location, has been offered the Whitney home, located at the corner of Canfield and Woodward Avenues, Detroit. This building was one of the finest in Detroit, until business houses began to encroach so as to spoil the residential character of the neighborhood. Mr. David Whitney has offered the building to the Wayne County Medical Society to be used as a club house. This will give the Society more spacious quarters, for which it is badly in need. The gratitude of the Wayne County Medical profession is accorded Mr. Whitney for this munificent offer.

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## SCHOOL TO AID HANDICAPPED

The Ann J. Kellogg School, Battle Creek, Mich., was dedicated on Nov. 24. This is a special school designed and equipped to meet the needs of all types of children. Those whose sight, hearing or speech is impaired, also the crippled, the cardiac, the anemic, the mentally retarded, the emotionally handicapped, as well as normal and gifted children. The guest speakers at the dedication of this institution were the Hon. Wilber M. Brucker, Governor, State of Michigan; Dr. Alexander G. Ruthven, President, University of Michigan; Dr. H. E. Barnard, Director, White House Conference; Hon. Webster H. Pearce, Superintendent of Public Instruction; and Dr. Charles Scott Beery, Director of Special Education, Ohio State University.

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## THE HIGHLAND PARK PHYSICIANS' CLUB

The Highland Park Physicians' Club will hold its annual clinic December 5 at the Highland Park General Hospital Nurses' Home. Some of the men on the program are: Dr. Frank Lahey of Boston, who will speak on Carcinoma of Colon and Rectum; Dr. John Miller of Chicago on Problems in Surgery of Children; Dr. L. W. Dean of St. Louis on Sinusitis in Children; Dr. John Moorhead of New York on Traumatic Surgery; Dr. Cyrus Burford of St. Louis on Differential Diagnosis of Kidney and Ureteral Stones; Dr. John Scott of Cleveland on Heart Diseases; Dr. Ralph Kinsella of St. Louis on Treatment of Streptococcal Infections; and Dr. Carey C. Culbertson of Chicago on a subject in Gynecology. The full program will appear in programs to be sent out later. The Highland Park Physicians' Club extends a hearty invitation to all the physicians of the State to attend their clinic and hear all these men of national reputation and help make this clinic the outstanding one-day clinic in the country.

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## DR. MOLL HONORED

A testimonial dinner was given by the Genesee County Medical Society to honor one of their members, Dr. Carl F. Moll, President of the Michigan State Medical Society. The dinner was held at the Flint Golf Club on Wednesday, October 28, 1931. There was a very large attendance of members and guests. After the program, Dr. Moll, the guest of honor, made a very appropriate address in response to the many friendly remarks of the speakers. Following Dr. Moll, the toastmaster, Dr. Frank Reeder, introduced the out-of-town guests. The program was as follows: Toastmaster, Dr. Frank Reeder; Invocation, Fr. P. J. Dunnigan; The State Medical Society, Dr. F. C. Warnshuis; Past Presidents, Dr. H. E. Randall; The Physician and the Probate Court, Judge V. W. Dodge; The Physician and the State Board of Health, Dr. C. C. Slemons, and The Genesee Medical Society, Dr. L. L. Willoughby.

Dr. J. M. Robb of Detroit spoke briefly, commending the work of Dr. Moll and promising to continue it when he took office. Members of the Hurley Hospital board were also guests.

Among the guests present were Dr. Theodore Heavenrich of Port Huron, Dr. B. R. Corbus of Grand Rapids, Dr. C. A. Neafie of Pontiac, Dr. J. D. Bruce of Ann Arbor, Dr. Harley Haines, head of the University Hospital at Ann Arbor, Dr. Louis J. Hershman of Detroit, Dr. Harry Ferguson of Saginaw, Dr. Earl I. Carr of Lansing, Dr. J. H. Dempster of Detroit, Editor of the Journal of the Michigan in State Medical Society, Dr. Henry Luce of Detroit, Dr. G. H. McKenzie of Port Huron, Dr. Arthur Moll of Grand Rapids, son of the president of M. S. M. S., and Dr. J. Milton Robb of Detroit, who will follow Dr. Moll as president of the state medical society.

# SOCIETY ACTIVITY

## PRESIDENT'S GREETING

I am happy to extend to you Joyful Christmas Greetings, and the wish that the New Year will be generous to you in health, success and prosperity and in all that will help in making you better doctors. It is a wise custom at the close of a year to take an inventory, not only of our worldly possessions but of our spiritual assets. To strike a trial balance, so to speak, of our accomplishments and of our failures. Are we richer in the service we have rendered our fellow men, or have we failed in giving the best there is in us? Have we done our best in constructive work for the advancement of organized and scientific medicine, or have we shirked the responsibility that confronted us? These are queries that can only be answered by you as individuals. If you in your own minds find the balance in the "Red" now is the time to plan your budget to make it impossible for this to occur again. Our growing problems make it of vital importance that each and every one of us do his bit and do it with an eager energy that will not permit a failure.

CARL F. MOLL, *President.*

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## GREETINGS

But a few weeks and once again we will be in the midst of the holiday season. The year ending has been one of many trying situations. A year in which we have encountered conditions that required sacrifices and the relinquishing of plans that each had hoped to consummate. A year, yes, of disheartening events. However, they are past. We are eager to forget them. We have survived. We are going to look forward—not back.

And so, with eyes and thoughts and spirit directed forward and to a new year we utilize this means to extend the season's greetings and good wishes to our members. Whatever the year has been or meant to you, do not permit it to cloud your holiday season. Now, if ever, do we need the spirit of good will and good cheer. Reflect it, extend it. Good cheer, good will will go far in aiding all who have been sorely tried. It will help them to surmount their troubles and inspire them to carry on with renewed zest and zeal.

So let your greetings and spirits be happy and merry. Extend them to all you meet and with a handclasp that is a little firmer, a little warmer.

It is in that spirit that we tender to all members, associates, advertisers and sister state organizations, a hearty, friendly wish for a merry Christmas season and Happy New Year.

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## PUBLIC HEALTH EDUCATION

E. A. MEYERDING, M.D., Secretary, Minnesota State Medical Association

What is the private physician's interest in public health education?

The question may be answered at length with Socratic dissertations on the duty of man. Or it may be answered practically and without any recourse to fine sentiment.

I shall choose the latter way, not because the doctor is impervious to fine sentiment, but because he has been too little aware of the very practical benefits to be gained for himself and his profession by an effective, organized participation in public health movements and preventive medicine in general.

Preventive medicine is, of course, the true child of the laboratories. It is the stepchild, so to speak, of the medical faculties and but recently taken under the wing of schools of orthodox medical arts. To many fine physicians trained in the older tradition of medicine, it may still seem as foreign as the painting of Picasso or flying as a convenient way to get to Chicago. But I believe it can be shown to be more profitable, even to these, than any of those other essentially modern signs of the times.

It is profitable because a child saved from the major health disasters such as diphtheria or scarlet fever or tuberculosis lives to have a possible appendectomy, a probable tonsillectomy, possible repeated childbirths and dozens of periodic health examinations, to mention only a few of the many possible profitable contacts with his physician.

Such contacts are easier, tidier and much better regulated than the emergency night calls that made up so much of the old timer's practice. They are much to be desired over the business of patching broken

parts. Ethically they are much more satisfactory.

Is such a picture of private medical practise far-fetched and impractical? Consider the life of the modern pediatrician. How much patching, how much emergency work in the dead of night does he do? His well trained patients come to him regularly at regular office hours whether they need patching or not. He regulates their diets, gives them their inoculations when they should have their inoculations, keeps them well in place of attending them when they are sick. Result: satisfaction all around on the part of both patient and physician—and a nice steady income for the latter.

Such a practice is waiting for the regular family practitioner, too. He could see his patients at regular intervals while they are well just as the pediatrician does—with a like steady gratifying income.

The question is: how is he to go about working up this enlightened continuous contact—not among the sick, only—but among well people who want to remain well? He can't go out and drum up such a trade. The pediatrician took advantage of the tremendous child health educational programs carried on in the last decade or so by all of the official and semi-official public health agencies to convert himself into an advisor for well babies in place of a last hope for the sick.

There is much more than a hint in that for the family practitioner. For instance, it is neither wise nor safe for the doctor, himself, to go about preaching the periodic health examination. But the doctor in his organized capacity can associate himself as advisor and director of the public health agencies, who can in their turn and will, with perfect propriety, do his preaching for him. Public health agencies are certainly equipped to preach the periodic health examination and preventive medicine in general with the same effectiveness that they have preached modern child care.

In this connection I want to describe one instance of a public health program associated with preventive medicine which can be made to yield literally hundreds of new and profitable contacts for the physician—profitable for patient and physician alike. This is the program of Mantoux tuberculin skin testing in the schools.

In Minnesota, the Minnesota Public Health Association, being the Christmas Seal agency for the state, has taken the lead in promotion of this program. The test has been followed everywhere with X-ray for those who reacted positively and the recommendation for examination by the family physician in each case.

The method is this: first they take their proposed program to the county medical society for its approval and advice and, incidentally, for the instruction of the physicians themselves. Tuberculin testing in unselected school groups is still new, of course, to the majority of physicians in private practice. A group of chest specialists of known reputation explain the proposal fully and give what amounts to a physician's short course on the details of the testing, its significance and the making and reading of X-ray plates.

In the course of the tests, a great many children appear with positive reactions who show no significant lung changes upon X-ray examinations and no sign whatever of clinical illness. These children are reported to their parents as having at some time been infected with tubercle bacilli. They are in need of two things: first an investigation into the family circle and immediate friends to discover if anyone among them is exposing the child to open tuberculosis, with a view to stopping a contact that may result in a dangerous infection; second, especial care for the general health of the child, his home and school surroundings, and frequent physical check-ups by the doctor to protect the child from any future flare-up of disease.

This considerable number of children above and beyond the number that are discovered with previously unsuspected childhood or adult type of tuberculosis, gives no outward indication of need for a physician's care. They constitute, if the physician interests himself in the testing program and cooperates with its sponsors, an entirely new group of patients that otherwise might never have come near his office.

There is no question that participation and encouragement of such public health programs as these is valuable.

As a matter of fact the whole public health program of enlightened, medically directed health agencies is not only valuable but absolutely essential if private medical practice is to accommodate itself to the practice of modern preventive medicine.

The problem of the physician is not to curb public health activity. It is to control

and direct such activity along sound scientific and economic lines. The public health agency needs the guidance of the practising physician. The practising physician equally needs the public health agency.

In Minnesota we are solving the problem by a practical union between the Minnesota State Medical Association and the Minnesota Public Health Association, Christmas Seal organization of the state. By this alliance, the health association benefits by sound medical advice in all of its undertakings, in its clinics, its health publications. The medical association profits doubly. In the first place it is able to keep public health education effort in the state out of the dangerous channels leading to socialization of medicine. In the second place it is able to promote without any violation of ethics or any awkwardness, the essential text, "See your family physician." The promotion of periodic health examinations, the routine of preventive inoculations and preventive measures in general—these are done with tremendous effectiveness by the public health organizations. The physician who does not give them his encouragement and approval and his aid when he can ethically do so is certainly in the absurdly untenable position of one who bites off his nose to spite his own face.

## ECONOMIC PROBLEMS

There is a growing demand, and rightly, that medical organizations devote more time to a discussion of medical economic problems. That this discussion is necessary for the information of our members in order that they may the better understand existing conditions. Further, that they may conform to the policies adopted and terminate practices that are being critized by the public.

Our medical organizations can dominate and lead if we present a united front. The trouble has been that we have failed to concern ourselves. Secondly, we have failed to give consideration to the factors that raised the issues. Third, no definite program is adhered to; individuals and groups have pursued diverging courses.

In order that our members may be informed and by those who are in a position to intelligently discuss features of organized medical activity, arrangements have been made for a series of articles to appear in the Journal. We have invited leaders in different states to prepare these articles for this section of the Journal. The first article appears in this issue. It is anticipated that they will serve to inspire interest and impart information that will induce our members to unite in a movement that will conserve and enhance our economic interests.

## WAR VETERANS' RELIEF

At the 1931 Philadelphia session of the American Medical Association, Dr. Shoulders of Tennessee introduced a resolution relating to the medical care of War Veterans.

This resolution was adopted by the House of Delegates and a special committee of the House was appointed to labor to secure the adoption of this type of veterans' medical relief. The special committee is headed by Dr. Wright of Minnesota, and the committee has been active ever since the meeting in Philadelphia.

It is quite essential that if this plan is introduced it is necessary to secure the endorsement and support of the state department of the American Legion. The responsibility of securing the endorsement of the American Legion in each state has been delegated to the State Medical Society.

In Michigan this activity has been partly instituted by Dr. Angus McLean of Detroit, who has already addressed or caused to be addressed some eight local posts of the American Legion and has secured their approval of this plan. The State Secretary has also on two occasions presented the plan to two legion posts. In order that an active campaign may be instituted in Michigan and that this plan may be presented to every legion post in Michigan, President Moll has assigned the task to a special committee on War Veterans' Relief and has appointed the following as members of that committee:

Dr. Angus McLean, Chairman, Detroit
Dr. J. G. R. Manwaring, Flint
Dr. W. E. Wilson, Grand Rapids
Dr. Robert Harkness, Houghton
Dr. Wm. C. Ellet, Benton Harbor

This committee will undertake to arrange and provide speakers in every locality in Michigan where there is a legion post and through these speakers present this plan.

Michigan's Medical History, 2 volumes, price $10.00, will make a pleasing Christmas gift. Order now from the State Secretary.

## OPEN TREATMENT OF FRACTURES

*Northwest Medicine* reports the following Washington State Supreme Court decision:

"The verdict in a malpractice action should be sustained, where it appeared that an operation was performed in order to set a fractured femur *without first attempting to secure union by the use of some generally used extension process.*" (Italics ours.)

Such court decision is indicative of what claims may arise in fracture cases. It estops the doctor and prohibits him from electing to employ open reduction until he has used manipulative-traction methods. A serious restriction is established.

From a professional view one concludes that this court invaded a field in which it is incompetent to judge.

Experienced surgeons well know that there are types of fractures that demand immediate open reduction. To employ manipulation and traction in these types of fractures invites most untoward results.

The decision rendered is not in accord with surgical experience and fracture knowledge. An appeal should be taken to a higher court.

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Reminder is again made that the Journal forms close on the 15th of each month. News items, announcements and reports should reach the Secretary before that date. Items received too late for publication in the current issue will be published in the next issue.

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A set of Michigan's Medical History, Two Volumes, Price $10.00 for the set, will make a suitable Christmas gift for your associates, internes and friends. Your order, sent to the Secretary, will have prompt attention. Order today.

## UNEMPLOYMENT RELIEF

November 9, 1931

To Officers of County Medical Societies
Gentlemen:

At the Pontiac meeting of our Society, the House of Delegates, by resolution, subscribed the profession's coöperative assistance to Governor Brucker for the purpose of aiding in the solution of the State's Unemployment Problem. This action was transmitted to the Governor. The following reply has been received:

Dear Dr. Warnshuis:

Your letter of September 29, addressed to Governor Wilbur M. Brucker, was referred to me for attention and reply, and I have delayed answering until such time as I could be sure that something definite could be suggested for consideration by the Michigan State Medical Society.

At the present time the counties of Michigan are rapidly being organized with county unemployment committees whose function it will be to seek additional jobs so that a greater percentage of those now out of work may be able to earn an income.

In a number of counties it has been the practice to subject applicants to medical examination, and reports from over the country indicate that physicians have frequently been able through such examinations to suggest lines of work for which various individuals are fitted, and also in some cases to apply remedies that would return to health heads of families who are not now able to follow any useful occupation.

In view of the fact that these committees are being organized on a county basis, it occurs to us that the County Medical Societies might find it desirable to offer their services in providing free examination for these persons, wherever they have not been so examined by some other agency.

If this suggestion meets with your approval we would be glad to know about it, and also would appreciate it if your office could communicate with your local organization.

I can assure you that the splendid offer which your Society has made has been appreciated very much, both by Governor Brucker and the members of the State Unemployment Commission.

Very truly yours,
(Signed) R. WAYNE NEWTON,
*Secretary* UNEMPLOYMENT COMMISSION.

As President I am transmitting this information accompanied with the following as my official recommendation:

That every County Society create a Relief Committee. That this committee make contact with the County Relief Committee and aid in every reasonable way to carry out Michigan's relief program.

I am of the opinion that the evidencing of such coöperation will redound to the profession's credit. I urge an active interest on the part of every County Society.

Respectfully,
CARL F. MOLL, *President.*
By F. C. WARNSHUIS, *Secretary.*

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## PHYSICIANS FROM ALL PARTS OF STATE HONOR DR. MOLL

Dr. Carl F. Moll of Flint, new president of the Michigan State Medical Society, last night received the tribute of approximately 85 physicians from all over the state at a testimonial dinner at the Flint Golf Club.

Besides representatives of the state organization, doctors were present from nearly every city in the southern part of Michigan. Dr. Frank E. Reeder served as toastmaster. Speakers were Msgr. Patrick R. Dunigan, pastor of the St. Michael's Roman Catholic church, who also offered the invocation; Dr. F. C. Warnshuis, secretary of the Michigan State Medical Society; Dr. H. E. Randall of Flint, past president of the state organization; Probate Judge Vernon W. Dodge; Dr. C. C. Slemons of Lansing, secretary of the state board of health; Dr. L. L. Willoughby, president of the Genesee County Medical Association, and Dr. F. B. Miner of Flint, an associate of the honored guest. Dr. Moll

spoke briefly at the end of the meeting in response to the commendations of the other speakers.

After offering congratulations to the new state president, Msgr. Dunigan warned him against vesting in the state too much medical authority.

"The first thing to guard against is state medicine," he said. "The strong individual in the medical profession is the man whose interest lies in science and the man who has the courage of his convictions."

Dr. Warnshuis spoke of Dr. Moll as an outstanding physician in the profession, and declared that his character was largely responsible for the many friendships he had made.

"You know what he has done in Michigan," he told the audience. "You know he has stood high in the ranks of the American Medical Association. He has been a leader in organized medicine. We of the state society want to join with you as you honor Dr. Moll." Turning to the state president, he said:

"We as a profession are proud to have you lead us on through the difficult tasks we face."

"We in Flint feel that we are shareholders in the honor you have bestowed upon Dr. Moll," Judge Dodge declared. He spoke on the relationship of the medical profession with the probate court. "It is my wish that the big medicine chief will bear this in mind during his term of office." The Judge spoke of the doctors as "medicine men" who, in the Indian conception, were second only to the great chief. He said such an idea of the doctor should prevail among the people.

Representing the past presidents of the state society, Dr. Randall recalled incidents connected with the careers of each of the former chiefs. He said such recollections would help physicians to preserve the idealism of the profession.

"I know what the sentiments of these men would be, could they speak here tonight," he said, "and they would be to extend hearty greetings. With that goes our best wishes for success."

Probably one of the finest tributes was that of Dr. Miner, who as a fellow practitioner has been intimately acquainted with Dr. Moll for a number of years in Flint. He spoke of him more as of a friend than a scientist.

"His genial smile, his hearty greetings, announce his presence," Dr. Miner said. "We wait for his latest story. It would seem not extravagant to say of Carl: 'His interests are our interests.'"

Dr. Slemons outlined a plan for a public health program which he proposes for Michigan. He said public health is an economic problem faced by the new administration of the state society. Dr. Willoughby expressed his gratitude to the Michigan organization for electing a Flint man to the presidency. Telegrams of congratulation from the Bay county and Kent county societies were read.

Dr. Moll, in the closing address, promised his hearty service in his new office and asked for a measure of coöperation from the Flint members who had expressed themselves as his friends.

"Help me to guide the ship of organized medicine into tranquil waters," he pleaded.

Guests who were present last night include Dr. Theodore Heavenrich of Port Huron, Dr. B. R. Corbus of Grand Rapids, Dr. C. A. Neafie of Pontiac, Dr. J. D. Bruce of Ann Arbor, Dr. Harley Haines, head of the University hospital at Ann Arbor, Dr. Louis Hirschman of Detroit, Dr. Harry Ferguson of Saginaw, Dr. Earl I. Carr of Lansing, Dr. J. H. Dempster of Detroit, Dr. Henry Luce of Detroit, Dr. G. H. McKenzie of Port Huron, Dr. Arthur Moll of Grand Rapids, son of the honored guest, and Dr. J. Milton Robb of Detroit, who will follow Dr. Moll as president of the state medical society.

Dr. Robb spoke briefly, commending the work of Dr. Moll and promising to continue it when he took office. Members of the Hurley Hospital board were also guests last night.

*—Genesee County Bulletin.*

## A HIRED DRIVER IS YOUR SERVANT

Certain garages advertise at times to provide one with a driver at a certain rate per hour. Doctors at times need the services of a driver. If you call a garage and secure a driver, he becomes your servant and you are responsible for his acts—the garage is not holden.

We state this as a warning. Recently a doctor called for the service of a driver. A garage sent one. This driver completely wrecked the doctor's car. In a suit to collect from the garage for damages a directed verdict of no cause was rendered.

## BOARD OF REGISTRATION

### SECRETARY'S BI-ANNUAL REPORT

*October 13, 1931*

To The Michigan State Board of Registration in Medicine:

I have the honor of transmitting to you the bi-annual report of the activities of this Board and its Secretary:

FINANCIAL:

| | |
|---|---|
| Receipts, Oct. 1, 1929, to Oct. 1, 1930 | $13,776.00 |
| Receipts, Oct. 1, 1930, to Oct. 1, 1931 | 14,181.50 |
| | $27,957.50 |

DISBURSEMENTS:

| | |
|---|---|
| October 1, 1929, to Oct. 1, 1930 | $11,848.31 |
| October 1, 1930, to Oct. 1, 1931 | 12,761.74 |
| | 24,610.05 |

Net profit turned into General Fund:

| | | |
|---|---|---|
| 1929-30 | $13,776.00 | |
| | 11,848.31 | |
| | | $1,927.69 |
| 1930-31 | $14,181.50 | |
| | 12,761.74 | |
| | | 1,419.76 |
| | | $3,347.45 |

| | |
|---|---|
| BALANCE as of October 1, 1929 (GENERAL FUND) | $24,688.90 |
| 1929-31 balance | 3,347.45 |
| TOTAL BALANCE (GENERAL FUND) | $28,036.35 |

### EXAMINATIONS

Seven examinations were conducted:

| *1929* | Primary | Final | Passed | Failed |
|---|---|---|---|---|
| Lansing, October | 27 | | 27 | 0 |
| | | 27 | 27 | 0 |
| *1930* | | | | |
| Detroit, January | 4 | | 4 | 0 |
| | | 4 | 4 | 0 |
| Detroit, June | 74 | | 73 | 1 |
| | | 94 | 94 | 0 |
| Ann Arbor, June | 171 | | 170 | 1 |
| | | 179 | 179 | 0 |
| Lansing, October | 26 | | 26 | 0 |
| | | 26 | 26 | 0 |
| *1931* | | | | |
| Detroit, June | 69 | | 69 | 0 |
| | | 86 | 86 | 0 |
| Ann Arbor, June | 168 | | 168 | 0 |
| | | 127 | 127 | 0 |

Total primary....539
Total finals....543
Total primary-finals....1080
Total failed....2

Six regular meetings of the Board and three special meetings were held.

Number of licenses issued, Oct. 1, 1929, to Oct. 1, 1931—716
By examination—512
By indorsement—204

Licenses revoked during the past two years—11
Licenses suspended (temporarily)—3
Licentiates on probation—4

Causes for revocation—
- Narcotic conviction....1
- Court conviction....3
- Illegal or irregular practice....7

11

Number cited for hearings and hearings held before Board 33
Number cited for warning (1930-31 only)....22
Number complaints (1930-31 only)....59

PERSONNEL OF BOARD

On September 26 the following members were appointed by Governor Brucker, terms to expire October 1, 1934:

Drs. Kelly
Tew
Brook
McIntyre
Keyport

The following members' terms expire October 1, 1932:

Drs. McLaughlin
English
Walch
Yeomans
Tiefer

(Dr. J. J. Walch appointed to complete term of Dr. Lemire deceased.)

In June, 1931, Dr. Nelson McLaughlin resigned as President and Dr. Frank A. Kelly was elected President for the remainder of the term.

At the bi-annual meeting of the Board, October, 1929, Dr. F. C. Warnshuis was elected Secretary for the term of two years; Miss S. Brown was elected as Assistant Secretary for the same term.

SECRETARY'S ACTIVITIES

During the past two years your Secretary has discharged the following official duties in accord with the official actions and instructions of the Board, and by and with the knowledge of the officers of the Board:

*Monthly letter.*—Your Secretary has endeavored to inform the members as to official activities by means of a monthly letter, as well as by special communications. As a rule weekly conferences were had with the President. A studied endeavor was made to keep the members informed as to all Board matters and the official acts of the Secretary. At each Board meeting a résumé was rendered.

*Offices.*—In November, 1929, the Board's offices were removed from the Stroh Building to the Maccabee Building, Detroit.

During his term your Secretary has spent from two to four days per week in the Board's offices. He has made frequent trips to Lansing to confer with state officials. He has had several conferences with officials of the two medical colleges of the state.

He has consulted with twelve prosecuting attorneys and has had many conferences with investigators from the Department of Health, and the Department of Public Safety.

He has had an equal number of conferences in his Grand Rapids office, with also an equal correspondence.

In general, the time devoted to official duties has been equivalent to full time service.

*Legal.*—In all legal questions, the advice of the Attorney General and the Prosecuting Attorneys of Wayne County and Kent County has been sought.

The Attorney General has imparted opinions on:
- Board's power and procedure for revocation;
- Corporation practice;
- Limitations of drugless practitioners;
- Form of new certificates;
- Board hearings.

The Attorney General has represented the Board in two appeals to the Supreme Court and one appeal to the United States Supreme Court. Two requested opinions will be forthcoming in the near future.

*Intern Requirements.*—Following correspondence with colleges and hospital representatives, requirements to be met during the intern year were formulated and presented to the Board. After their adoption approved hospitals were notified.

*Board Forms and Rules.*—New blank forms were drawn up and are now in use. The administration rules of the Board have been compiled and issued in printed form. A new form of certificate of registration was drafted and approved by the Board. A request for funds for a modern filing and record keeping system was made; the request was denied by the Administrative Board. Such a system is imperative in order to index and summarize Board's records.

*Complaints.*—No week passed without one to ten complaints being filed. They emanated from citizens, doctors, court officials, business bureaus, health officials and committees. In every instance the complaint was carefully investigated and disposed of in the following manner:
- Referred to a prosecuting officer;
- Referred to an investigator;
- Holding interviews, with probation;
- Referred to a Board committee, or cited to appear before the Board.

Few realize that the Board is not charged with enforcement powers. It is estimated that there exist some 700 violators of the practice laws of the state. In consequence, complaints to this Board will continue to be filed. They must be acknowledged and dealt with. While not charged with enforcement, a certain responsibility to bring about enforcement rests upon this Board. To discharge that obligation the Board cannot ignore complaints, and instigate, as far as possible, prosecutions.

*Legislation.*—Upon the Board's direction, your Secretary conferred with the Attorney General and co-operated with him in drafting a bill providing for certain amendments to the present medical practice laws. Much time and effort was devoted to this draft and extended correspondence was entered into with national authorities. When the draft was completed it was sent to each member and to the county medical societies. At a special meeting of the Board the amendment was approved and the Secretary instructed to cause it to be introduced. After consultations with the Governor, the President and certain Board members, the bill was introduced. Committees of the Senate and the House were supplied with information as to why these amendments were desired. Other follow-up measures were employed until about six weeks before the Legislature adjourned, when the President directed the Secretary to discontinue further activity. The amendments were not adopted.

By and with the advice of the Board, a budget was prepared and submitted together with reasons substantiating each item. The Budget Director of the State sent into the Legislature a budget of the same amount as the Board had the past two years. The Finance Committee of the House and Senate were supplied with facts justifying the Board's requirements. No representation or requests were advanced by Board members or any endeavor made to secure sufficient appropriations to conduct the Board's business. The House and Senate approved the budget amounts contained in the appropriation bill. On the last day of the Legislature, in a conference, the Legislature struck the Secretary's salary. The funds appropriated are insufficient for the coming two years. It can be stated that sufficient funds will not be appropriated until the entire Board energetically undertakes to cause the Legislature to perceive the Board's financial needs.

The Legislature appointed a committee to study and draft a bill that will regulate all those who practice the healing art. From other sources an idealistic suggestion has been advanced to abolish all licensing bodies and to consign their present duties to a single licensing commission, or board. It may be assumed that the next Legislature will endeavor to enact new legislation to govern the functions of this Board. It is most important that serious consideration be accorded to these proposals and that representation be made and had in arriving at a solution.

*Board Examinations.*—It can be asserted that present day methods of medical education and training well-nigh render the Board's examination methods as obsolete and appraise them as being only a form. The present examinations, by the most liberal appraisal, cannot be considered as adequate to ascertain the applicant's qualifications. Our form of examination is no longer sufficient or discerning. The time is at hand when active measures must be adopted to bring the Board's examinations up to a plane whereby a candidate's qualifications may be determined more efficiently and reliably. This is imperative, in order to maintain recognition for our licentiates.

The progress made by scientific medicine and the practice reflected by members of the medical profession both compel this Board to adopt certain rules, prescribe definite qualifications to be met and to issue a special certificate attesting to an applicant's competency to claim special ability in the several branches of medicine. The public is entitled to this protection and it is this Board's duty to take the initiatory action. Such a demand is growing in force and gains inspiration from educators and economists. This problem is now at our door and if licensing bodies do not solve it we can expect that legislative bodies will enact discriminating, inadequate, and probably intolerable, laws.

*Licenses in Force.*—The records of the office are such that it is impossible to state how many licenses are in force today. We are unable to state how many licenses are ineffective by reason of revocation, or the removal or death of licentiates. To obtain all this information it is necessary to check and recheck every license issued and ascertain the whereabouts of every licentiate and institute an active and inactive license file. To do so will entail an expenditure of about $5,000 for files, clerical assistance and correspondence. The work would consume about a year's time. This is the only way to bring our files up to date and having once done so they can readily be maintained.

*Federation Relationship.*—New York State, on a technicality, has for many years declined to recognize and indorse Michigan's license. During the past year your Secretary has re-opened this situation. Briefs were filed, facts were presented and the points raised were answered. I am in receipt of a letter from the New York Secretary that upon the representation made New York will now recognize the Michigan license and that the formal action would be recorded at their next meeting. This, therefore, clears up a situation that has been the source of much controversy over a period of fifteen years.

Washington State modified its medical law this past year and incorporated a basic science examination requirement. They now require those seeking Washington indorsement to take their basic science examination, even though their Michigan license was dated prior to 1931. This retroactive application of this law was deemed unjust. In consequence, Michigan, with many other states, severed indorsement relationship with the State of Washington.

Your Secretary was elected Vice President of the Federa-

tion of Examining Boards at the February, 1931, meeting. He was also appointed Chairman of a committee on Corporation Practice. This committee is to formulate an opinion and policy to be observed by all state boards in dealing with corporate practice of medicine.

*Recommendations.*—The experiences and activities of your executive officer induce him to submit the following pertinent subjects to this Board for consideration, action and instructions:

1. That the Board's method of holding examinations be reviewed with a view to modifying them and to incorporate certain oral and clinical examinations as requisite for securing a license.
2. That the Board go on record that it cannot issue a blanket license to a corporate group organized to practice medicine under a corporate name.
3. That the Board define "contract practice" as referred to in our law.
4. That the Board appraise the Army and Navy Medical Colleges and determine what recognition it will give to its graduates.
5. That the Board determine whether those serving in a Veterans Hospital shall be classified as U. S. medical officers and whether they shall come under the exemption provision in our law.
6. That the Board declare a policy in regard to licensed Indiana and Wisconsin physicians who are living on the border of Michigan and who practice at times within the boundary of our state.
7. That the Board take action to establish contact with the Special Committee of the Legislature, appointed to make recommendations for medical legislation to the next Legislature.
8. That the Board designate representatives to appear before the Administrative Board for the purpose of securing the required appropriations that will enable the Board to function efficiently.

### CONCLUSIONS

In completing my term of office as Secretary, I sincerely express my appreciation for the privilege of serving and the consideration accorded.

I have sincerely endeavored to comply with the Board's every instruction. My quest has been to impart my every activity in order that each member might remain informed as to that which was being done. In my monthly letters, and in my semi-annual reports when the Board was in session, I have reported to you in detail that which had been done and the matters that were pending, and sought your instructions and advice.

The objective sought was the efficient discharge of the Board's business. Secondly, to enhance the Board's standing in order that it will attain and maintain a foremost position in the Federation of American Examining Boards and so cause Michigan to be recognized throughout the nation as a Board that is functioning in a manner that will inspire confidence. Lastly, to serve the people of Michigan by providing for them licentiates whose qualifications conform to present day standards.

Such has been my motive and to that end did I labor.

Respectfully,
F. C. WARNSHUIS,
*Secretary.*

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## PROCEEDINGS OF THE COMMITTEE ON SURVEY OF MEDICAL SERVICE IN MICHIGAN

1. In compliance with the resolution passed by the House of Delegates of the Michigan State Medical Society at its annual meeting in Pontiac, September, 1931, President Moll appointed the following as members of a special committee on Survey of Medical Services in Michigan:

W. H. Marshall, Chairman,
L. G. Christian,
Bert U. Estabrook,
C. S. Gorsline,
F. A. Baker,
F. C. Warnshuis, Secretary Ex-officio.

2. At the call of the Chairman, Dr. W. H. Marshall, the committee met in the Hayes Hotel, Jackson, Michigan, at noon November 5, 1931, with all the members of the committee present.

3. The resolution introduced in the House of Delegates and passed was read and discussed by the members of the committee.

4. Upon conclusion of the discussion Dr. W. H. Marshall, Chairman, presented the following statement as to the objectives of the committee:

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## THE ECONOMICS OF MEDICAL CARE

W. H. MARSHALL, M.D.
FLINT, MICHIGAN

The science and art of medicine present very complex problems, but the sociologic and economic phases are still more complex. During the last two years, the rapid changes in our social order and the continuous readjustments have bewildered many of us. This is probably the reason why the House of Delegates has assigned such a formidable task to us. Such pessimists as Mr. H. G. Wells think that our civilization is sweeping towards a cataclysmic downfall. Other keen students of this economic crisis believe that our American capitalistic system may cure its own ills and all may be well for a time, at least. Others think that we are in a period of transition from the old order of things to a new order.

I am inclined to believe that we are in a state of rapid transition. Schools, colleges, the press, the movies, and the radio, have given us a more intelligent public, and our civilization seems to be changing very rapidly. The exploiter of humanity will not have as easy a time as when this was a peasant world. The greatest fault of our democracy is our fear of the expert. While our industrialists have been quite ready to accept the work of research engineers, yet in our political and economic life we have been slow to accept the findings of the trained economist. He will eventually be given the consideration which he deserves.

If the world is to be saved, it will be by men of common sense, by men who have faith that evolution gradually brings us up to a higher order of things, by men who have courage to take life as it is and who faithfully work to make it better. In other words, adequate leadership is our supreme need today. The men who have assumed leadership of our medical societies should also assume the obligation to face the difficulties of the present moment. They should not lose their heads and run to the government for remedies which it is not a part of the government to provide. We should not act rashly. In this amazing time, we are too near the blurred picture to grasp its significance. But we can be sure that, although political and economic systems may change, the sick and the maimed will still need care, and the medical profession, in spite of its imperfections, will still continue to give it. It is pathetic to realize that our people are getting but a small percentage of the benefits which modern medical science can confer upon them. Particularly is this view forced upon us after reading of the work of the Danish Medical Profession. May we say, in passing, that in no other country are the people getting the benefits of an educated medical profession so splendidly as in Denmark. Further, in no other country is the doctor so highly respected.

Undoubtedly our profession may have some shortcomings, but we should be courageous enough to face the facts, and to diagnose and cure our own ills rather than have this done by outside interference. Philanthropists will, as always, provide funds for the needy and afflicted. This is commendable. But we have failed in having very little to say about how such funds shall be administered. Our guidance and advice would have been welcome if we had but merely shown our interest.

The medical profession has a record of unselfishness and high-mindedness not excelled by that of any other social group. From the time of Hippocrates our profession has been activated by two principles only—philanthropia or the love of humanity, and philotechnica, the love of our work. Financial gain has never been a dominating motive. But in this rapidly changing epoch conflicting loyalties are inevitable—someone else and his family—ourselves and our own family. It needs courage today to have the larger outlook when we are compelled to adapt ourselves to a society that has been dominated by a super-acquisitive industrialism.

The reaction of the public to the press reports of our Pontiac meeting clearly shows a rising tide of public distrust in our motives. Such situations may play a large part in forcing state medicine upon us, for the public is always stampeded by emotional propaganda rather than by rational arguments. History usually repeats itself, and after every economic depression we have always had a flood of legislation relative to workingmen's compensation, insurance, etc. It would be very inopportune for this committee to sweepingly condemn all the activities mentioned in this resolution. In many of these agencies there is much to commend, and they have evolved because there seems to be a need for them. We cannot stop social evolution any more than we can stop biological evolution, and should we merely condemn these agencies without a thorough investigation of their merits, we will simply increase that social animosity towards our profession which seems to be increasing year by year. To merely protest against certain conditions does not indicate that we are thinking logically—it may merely indicate that we are reacting in a reflex way to protect our own interest while disregarding the rights of the public. Our American people are beginning to insist in no uncertain tones that human rights are as fundamental as property rights.

The preamble to the resolution seems to indicate that health agencies are being organized with little discrimination, and that there is obviously a marked tendency towards paternalism. Moreover, there is much overlapping and duplication of interest. We should review very carefully the activities of each agency named in an attempt to avoid duplication of efforts as far as possible. There are agencies mentioned in this list which are now opposed by many doctors. But our disapproval means nothing and can accomplish nothing. We cannot be wholly indifferent to these trends in medical economics. I believe that we must get the best constructive thought which is available in our society, so that if any modification of our present relationship with the public should seem necessary, such modifications should arise within the profession itself.

The practice of medicine is highly individualized; not only does each patient present individual problems, but each community has problems differing in many ways from those of other places. I believe that County Societies could settle most of these difficulties better than the State Societies could. Thus, the situation in Detroit differs considerably from that in Grand Rapids, or Flint, and very greatly from that in the smaller cities, towns, and villages. For example, contract practice is frowned upon in Detroit, and yet for a great many years it has been considered to be quite ethical in the mining and lumber towns of the Upper Peninsula. Moreover, it would be difficult to designate who shall be called "poor" in the state as a whole, inasmuch as the wage scale and the cost of living vary so much in different cities. I further believe that if a small unit of government, for example, a village or a township, finds difficulty in retaining a doctor, a municipal physician could well serve such a unit under contract. This has been successfully accomplished in rural Saskatchewan. This might be the only way by which the continued services of a medical man could be assured, and I do not believe such an arrangement should be called State Medicine. I am Jeffersonian enough to allow the smallest units to solve their own problems and I am opposed to the centralization of government and government agencies.

In approaching our task, three methods of procedure might be considered. First, this committee can gather what data may be available, and procure further data that may seem necessary by our own investigations, or by questionnaires. Then we might endeavor to agree upon recommendations to be embodied in our report to the House of Delegates. This could be accomplished before February, 1932. It is questionable if such a report would be very valuable; in fact, such investigations seem to have borne but little fruit.

The National Committee on the Cost of Medical Care has already expended about a million dollars in the investigation of the problems of medical economics. About twelve of their twenty-six publications have already been issued. It would be desirable for every member of the State Society to read these books, and certainly our committee would have a narrow outlook if we failed to study the data afforded by this survey.

Secondly, we could arrange a get-together conference with representatives of the various agencies concerned. Such a meeting would require a session of not less than two or three days. It would have the advantage of promoting a better understanding of each other. In passing, several of the agencies mentioned in this resolution could not be represented because many of their problems are already settled by Federal and State laws.

Thirdly, if we recognize that our difficulties are but the growing pains of a rapidly evolving social order, it will do little good to offer mere palliative treatment. Scientific sociology might point the way to a better solution of our problems. If a comprehensive survey seems desirable, these matters should be turned over to an expert in sociology and economics. He should be a man trained in conducting surveys. He should be a layman. He undoubtedly could get assistance from the departments of Economics and Sociology. There is always an abundance of graduates going up for higher degrees who are eager to have new and practical problems for their theses. Such a plan would have definite advantages. The findings would be applicable to our own state, whereas those of the Committee on the Cost of Medical Care are not. The workers should be trained men and under expert supervision. The work should be carried on by students outside of our profession and this would relieve the doctors of that suspicion with which the laity is likely to view our efforts. Such a thoroughgoing investigation would give us a mass of data pertaining to important sociological and economic problems of our own state. A better mutual understanding would help us to readjust ourselves, and in the long run would promote better feeling and greater stability in this commonwealth. Such a task would require at least two years to complete. It would cost not less than $50,000, a sum much too large for this Society to underwrite. Possibly some organization, such as the Millbank Fund or the Rosenwald Foundation, could be induced to finance such a survey. I believe, however, that our society should have something to say about the selection of personnel. So far as I know no other state in the Union has attempted such an investigation in an attempt to analyze the medical needs of a state and to correlate them with the existing medical facilities and agencies. Michigan has frequenlty pointed the way in medical affairs. It would be to her glory if again she would blaze the trail for sounder medical economics. Therefore, I should like this committee to

request the House of Delegates of the Michigan State Medical Society and the Secretary thereof to make overtures to some organization capable of doing this work.

Many questions come up immediately. We must decide if a medical problem exists. If so, in what social groups is it manifest? This situation is dependent upon the relationship between income and the cost of living. Accurate data on this are available from government sources. Assuming that there is a medical problem, what is the best possible solution? By whom shall it be solved—by a medical or by a public organization? If a tax-supported agency must furnish the relief, who shall direct or control its activities? Many other questions are readily suggested.

Our task is a difficult one. There are those in our Guild who adhere strongly to tradition. There are those who would turn the clock back thirty years if they could. There are those, like President-Elect Kanavel of the American College of Surgeons, who would have the profession guide the movement toward collective medical services for people of moderate means. Finally, there are those who by temperament will find fault with any scheme of things. But we must not trim our sails to please any group. If we lay claim to being honest scientific men, we should get honest facts. Then we should weigh them carefully and then decide upon plans that will give the people of the State of Michigan a medical service second to none. Then, and only then, will we gain the respect which we think our calling deserves.

5. Upon motion of Gorsline-Baker, the Chairman's statement was endorsed.

6. Upon motion of Christian-Estabrook, the Secretary was directed to make contact with several national foundations for the purpose of ascertaining whether or not some one of these foundations would undertake to underwrite a complete and thorough study of the medical services that are now being operated in the state by various groups, foundations and other organizations, and to report at the next meeting of the committee.

7. After considerable discussion as to the problems and methods in which the work of the committee may be best instituted the Chairman assigned certain investigations to the following committee members—

Industrial Medicine, C. S. Gorsline
United States and State Health Service—B. U. Estabrook
Hospital Problems—F. A. Baker
County Society Contract Work—L. G. Christian

8. Upon motion, the committee adjourned to meet in Lansing on the afternoon of December 2, 1931.

F. C. WARNSHUIS, *Secretary.*

## POSTGRADUATE CONFERENCES

On November 5, the Jackson County Medical Society conducted its annual conference in conjunction with the members of the Second Councilor District. The attendance reached 238.

It can be recorded that this conference excelled every other conference that has been sponsored this year. No other session recorded such a large attendance, presented so well balanced a program or imparted so great an amount of instructive information. Every credit and commendation is accorded to the Jackson profession and the local committee, led by Drs. Peterson, Corley and Schmidt, and Dr. Alter as secretary.

Many attended from outside the district. The State President and President-elect were also present.

The program, as published in the November Journal, was begun at 9:15 A. M., and a full attendance was maintained throughout the day, till after Dr. Charles Mayo ended his address at 5:20 P. M.

Following adjournment Councilor McIntyre conducted a round-table conference of the members of the Public Health Committees of the Societies in his district. A program of uniform health activity was formulated.

We repeat, the year's banner is awarded to Jackson County. Their work should inspire other districts to conduct conferences of equal value.

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A Postgraduate Conference was held by the Eleventh Councilor District in the Muskegon County Sanitarium, Muskegon, Thursday, November 12, 1931. A luncheon at noon preceded the afternoon's program:

1:00 P. M. Pulmonary Tuberculosis—A Clinical Demonstration
STUART PRITCHARD, M.D., Battle Creek
1:45 P. M. Mortality Factors in Appendicitis
FREDERICK A. COLLER, M.D., Ann Arbor
2:30 P. M. Infectious Diseases, Prophylaxis and Treatment
JOHN E. GORDON, M.D., Detroit

A similar program was given by the Third Councilor District at the Post Tavern, Battle Creek, Friday, November 13, 1931, as follows:

*A Discussion of Social and Medical Agencies*

1:45 P. M. The State Department of Health
.....C. C. SLEMONS, M.D., Lansing
The Children's Fund of Michigan
.....MR. WM. J. NORTON, Detroit
The W. K. Kellogg Foundation
STUART PRITCHARD, M.D., Battle Creek
The State Medical Society
.....B. R. CORBUS, M.D., Grand Rapids
The University Medical School
.....J. D. BRUCE, M.D., Ann Arbor

## PEDIATRIC AND ORTHOPEDIC PROGRAM

A pediatric and orthopedic program was given by the Children's Fund of Michigan and the Michigan Crippled Children Commission under the direction of the Michigan State Medical Society at Escanaba, Michigan, Friday, October 16, 1931, in the First Baptist Church, as follows:

1:00 p. m. Pediatric Clinic—Dr. M. Cooperstock, Marquette
2:00 p. m. Orthopedic Clinic—Dr. Chas. W. Peabody, Detroit
3:00 p. m. Acute Infectious Diseases, including résumé of Infantile Paralysis Situation—Dr. John E. Gordon, Detroit

## INTER-COUNTY MEETING, BAY COUNTY

On November 4, at Franklinmuth, 136 members were present at the Inter-County Meeting, which was addressed by Dr. Bernard Fantus, professor of Therapeutics, University of Illinois.

Councilor Urmston introduced President Carl F. Moll, who responded with his usual inspiring advice.

Councilor Urmston then introduced the invited guest speaker, who spoke on "Therapy of Colon Stasis."

Members were present from Grayling, Detroit, Lapeer, Saginaw, Flint, Bay City and adjacent territory. This attentive audience acknowledged a profitable evening.

At the conclusion of the program Councilor Urmston and the officers of the Bay County Society assumed the rôle of genial hosts. Many friendships were renewed and made.

These inter-county meetings are looked upon as a profitable adjunct to the county society meetings and go far in advancing the profession's solidarity. The programs have all been of outstanding interest, with national men as guest speakers.

# COUNTY SOCIETIES

## CLINTON COUNTY

At the regular annual meeting of the Clinton County Medical Society, held at the Clinton Memorial Hospital on October 20, 1931, the following officers were elected for the ensuing year:

President, Dr. G. H. Frace, St. Johns, Michigan; vice president, Dr. F. E. Luton, St. Johns, Michigan; secretary and treasurer, Dr. T. Y. Ho, St. Johns, Michigan (relected); delegate to state society meeting, Dr. W. B. McWilliams, Maple Rapids, Michigan; alternate to State Meeting, Dr. A. O. Hart, St. Johns, Michigan.

T. Y. Ho, M.D., *Secretary.*

## GRATIOT-ISABELLA-CLARE COUNTY

The October meeting of the Gratiot-Isabella-Clare County Medical Society was held at the Wright Hotel, Alma, Thursday, October 15, 1931.

Dinner was served to twelve members and four visitors. Five members came in after dinner for the program.

The meeting was called to order by President Harrigan. The minutes of previous meeting were read and approved.

Dr. T. J. Carney made his report as delegate to the State Society in Pontiac.

President Harrigan then introduced Dr. N. W. Larkum, immunologist of the State Board of Health, who talked on "Bacteriophage." Some of his points were as follows:

Bacteriophage was first discovered by d'Herelle, a French bacteriologist, while working with a fecal filtrate. He found the latter would sterilize a culture of Shiga bacillus. It is not known what the phage is. However, it is known that when this substance is placed in contact with certain bacteria it reduces their resistance to the leukocytes. Or to say it in another way, the leukocytes that would digest one bacteria before the phage was placed in contact with the bacteria would digest four after the phage was mixed with the bacteria.

Bacteriophage is useful in the treatment of cholera, dysentery, furunculosis, impetigo, staphylococcus infections, some strains of streptococcus, and acne, and gonorrhea.

There is no set dosage. The State Laboratory recommends 2 c.c. subcutaneous, repeated inside of 48 hours. In acne, they recommend 8 to 10 injections at weekly intervals.

We have no phage for colds in this country.

After Doctor Larkum had talked for one hour, he very kindly answered many questions.

On behalf of the Society, President Harrigan thanked Doctor Larkum for his very instructive and interesting talk.

The meeting adjourned.

E. M. HIGHFIELD, M.D., *Secretary.*

## JACKSON COUNTY

The October meeting of the Jackson County Medical Society was held in the Memorial room of the Elks temple after a six o'clock dinner. Dr. Clarke, chairman of the Health Education Committee, gave a summery of the work done by this committee during the past year. Their work has been of an educational nature, directed towards arousing the public to the importance of health and the value of periodic health examinations, and towards the development of proper medical service and advice. The public was reached through the the press, the platform and through visual education and demonstration. During the year there were twenty-seven news items to appear in local papers sponsored by the Society, and one paid announcement. The Society also sponsored ninety-five lecture programs in the city during the year. In the visual education campaign there were three moving pictures used, thirty poster exhibits, four thousand pamphlets distributed, twenty-two food exhibits, eight cooking exhibits, and four hundred and twenty-five Mantoux tests completed. All of this was done at a cost to the Society of $238.96. Plans for extending this work are in progress. A conference with leaders in health education activities in adjoining counties will be held in Jackson next month for the purpose of determining how best this may be carried on.

Dr. Riley, chairman of the golf committee, gave a report of the doctor's tournament, which just closed. The silver cup donated by Mr. Geo. Campbell was won by Dr. W. H. Enders, who was runner up last year. Dr. Cooley was runner up and took second prize of ten dollars in trade at the Sun Bldg. Drug Store. The low gross score was won by Dr. Leahy and the prize for high gross score by Dr. Marsh.

It was moved by Dr. Riley that the committee recently appointed by President Moll to investigate the work of clinics and health agencies be invited to Jackson to hold their meeting on Nov. 5. Motion seconded by Dr. Munro and the motion carried.

It was reported that on a few occasions county indigent patients have not been allowed to have the physician of their choice, as was agreed by the County Board of Supervisors and local physicians. Physicians are requested to report these cases to Dr. Smith. It was also reported that two supervisors were not respecting the fee schedule adopted. These should also be reported.

The Society went on record as approving the work of Dr. Warnshuis as secretary of the Michigan State Medical Society and hopes that he may be retained as the Secretary in the future.

There was considerable discussion about the care of the city indigent cases. Dr. Enders moved that a committee be appointed to work out a plan for taking care of these patients. Dr. Harris seconded the motion and the motion carried.

The meeting was then turned over to Dr. Frank Pray, program chairman, who introduced Dr. T. G. Yeomans of St. Joseph, who talked on some of the problems of the State Board of Registration. The Society went on record as opposing the annual reregistration of physicians and a $15.00 fee for the registration of specialists.

R. H. ALTER, M.D., *Secretary.*

## SANILAC COUNTY

A reorganization of the Sanilac County Medical Society was accomplished October 23, 1931, with sixteen physicians present. At this time it was recommended that all the names of physicians in Sanilac County be forwarded to the State Society and they in turn mail the Journal to each until January, 1932, when the annual dues will be paid and sent to the State Secretary.

The following officers were elected: John E. Campbell, Brown County, president; Kenneth Dick, Carsonville, vice president; S. Martin Tweedie, Sandusky, secretary and treasurer; J. C. Webster, Marlette, delegate to State Convention; R. K. Hart, Croswell, alternate delegate.

H. H. Learmont, Croswell, and D. D. McNaughton, Argyle, were appointed members of the Medico-Legal Committee.

The first meeting was held at Sandusky, Mich.,

November 5. A dinner was given at Hotel McDonald by Drs. Evans and Martin Tweedie.

Dr. Clarence Owen, Pathologist Grace Hospital, Detroit, gave an interesting paper on "Diagnosis with Simple Laboratory Procedures." Discussion followed.

Dr. J. E. Campbell, President, had charge of the meeting and advised the combining of the Seventh District Counties into a unit for political power and having each county give one dinner a year.

A meeting of the Lapeer County Society was held at Imaly City, November 12, which a number of Sanilac physicians attended and furthered the discussion of uniting.

A resolution was passed giving unanimous consent to Dr. Heavenrich, Councillor, to use his voting power for the retention of Dr. F. C. Warnshuis as secretary of the state society.

Twenty-four physicians were present at the meeting.

S. MARTIN TWEEDIE, *Secretary-Treasurer.*

## MACOMB COUNTY

The Macomb County Medical Society met in the Park Hotel, Mount Clemens, at noon November 2, 1931. Twenty doctors were in attendance. The routine business of the society was discussed and plans for the winter were outlined.

By invitation Dr. T. F. Heavenrich of Port Huron was the speaker of the afternoon. He gave a very interesting talk on business conditions affecting the doctor and the practice of medicine. Following Dr. Heavenrich's talk there was a general discussion of the subject that proved very interesting and instructive to the members.

JOSEPH N. SCHER, *Secretary.*

## WAYNE COUNTY

Dr. Raphael Isaacs of the Simpson Memorial Institute, Ann Arbor, will speak before the Wayne County Medical Society at the General Meeting of December 1, 1931. His subject will be "The Present Status of the Diagnosis and Treatment of Anemia; with Memorandum."

Dr. Ralph Pemberton of Philadelphia will speak before the Medical Section on December 8. His subject will be "The Newer Outlook on Chronic Arthritis."

Dr. Carl Menninger of Topeka, Kansas, will address the joint meeting of the Wayne County Medical Society and the Detroit Society of Neurology and Psychiatry on December 15, 1931, in the County Society's auditorium.

All members of the Michigan State Medical Society are cordially invited to attend meetings of the Wayne County Medical Society, which are held every Tuesday evening in the Society's auditorium, lobby floor, Maccabees Building, Woodward at Putnam, Detroit—opposite the Public Library and Institute of Arts.

Radio broadcasts over station WWJ have been sponsored through the coöperative efforts of the Public Education Committee of the Wayne County Medical Society and *The Detroit News.* This series began on October 19, 1931, and includes ten lectures as follows:

Time: 5:30 to 5:45 P. M.
Monday, Oct. 19, 1931 "Common Colds"
Dr. John T. Watkins
Monday, Oct. 26, 1931 "Physical Culture Fads"
Dr. F. C. Musser
Monday, Nov. 2, 1931 "The Eye"
Dr. Ralph Pino
Monday, Nov. 9, 1931 "Reducing Fads"
Dr. C. J. Marinus
Monday, Nov. 16, 1931 "Urology"
Dr. Wm. E. Keane
Monday, Nov. 23, 1931 "Are We All a Little Crazy?"
Dr. D. R. Clark
Monday, Nov. 30, 1931 "The Skin"
Dr. R. A. C. Wollenberg
Monday, Dec. 7, 1931 "The Ear"
Dr. Wadsworth Warren
Monday, Dec. 21, 1931 "Diphtheria"
Dr. John E. Gordon
Monday, Dec. 28, 1931 "Some Facts About the Hum
Dr. Stuart Wilson

The WWJ broadcasts are in addition to the presentations of radio station WEXL, Royal Oak, over which the Wayne County Medical Society has been broadcasting three times per week since March, 1931. The hours at WEXL are from 10:30 to 10:45 A. M. The wave length of WEXL is 1310.

The Wayne County Medical Society has made an arrangement with the Detroit Police Department so that physicians called out on suspicious cases at night are accorded police protection. Physicians merely call police headquarters and a scout car is dispatched to escort the doctor to and from the call.

The Highland Park Physicians Club will hold its Annual Clinic in the Highland Park General Hospital on Saturday, December 5, 1931. Distinguished lecturers from many parts of the United States will present papers throughout the morning and afternoon sessions. The evening session will be held in the club rooms of the Wayne County Medical Society. Members of the State Society are cordially invited. No registration fee.

Postgraduate conferences on tuberculosis are being held at Herman Kiefer Hospital, Detroit, every Wednesday at 10:00 A. M. under the auspices of the Public Health Committee of the Wayne County Medical Society in coöperation with the Detroit Department of Health. Dr. Henry S. Willis, formerly of Johns Hopkins University School of Medicine, and now with the staff of Maybury Sanitarium, is presenting the lectures. They are preceded by ward walks. All members of the State Society are invited to attend these interesting conferences.

Dr. H. A. Luce, delegate to the American Medical Association from Michigan, has been appointed as a Trustee of the Wayne County Medical Society, to fill the place left vacant by Dr. George Van Amber Brown.

The annual Thanksgiving family dinner was held in the cafe of the Wayne County Medical Society on November 25, the day before Thanksgiving, 11:30 A. M. to 2:30 P. M. Some two hundred physicians attended this dinner, offered annually by the House Committee during the Thanksgiving season.

Members of the State Society are cordially invited to take advantage of the cafe of the Society when they are visiting in Detroit.

"Less than a Dime a Day—Brings You These Advantages" are the opening words of a circular which has just been published by the Wayne County Medical Society. The pamphlet lists the advantages of membership in the organization. It has been mailed to all members and prospective members of the Association. Copies may be had upon request.

Dr. John Erdmann of New York City will address the Detroit Academy of Surgery in the Book Cadillac Hotel, December 10, 1931. His address will be preceded by a dinner.

The American Medical Association plan to provide medical care for veterans was set forth in The Bulletin of the Wayne County Medical Society of November 3. Dr. Angus McLean, a member of the Legislative Coöperative Committee of the American Medical Association working with the American Legion, outlined how the A. M. A. plan would save hundreds of millions of dollars of American taxpayers' money. His article stated that every local community would materially benefit by the provisions suggested in the A. M. A. plan.

# THE DOCTOR'S LIBRARY

GYNECOLOGY AND UROLOGY FOR NURSES. By Samuel S. Rosenfeld, M.D., F.A.C.S., Adjunct Obstetrician and Gynecologist Lebanon Hospital, New York City; Lecturer in Obstetrics and Gynecology to Lebanon Hospital School for Nurses; Diplomate of the American Board of Obstetrics and Gynecology. New York: William Wood and Company. 230 pages. Price $2.00.

THE MEDICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 15, No. 2. (Philadelphia Number—September, 1931.) Octavo of 303 pages with 37 illustrations. Per Clinic year, July, 1931, to May, 1932. Paper, $12.00; Cloth, $16.00 net. Philadelphia and London: W. B. Saunders Company, 1931.

THE SURGICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 11, No. 4. (Mayo Clinic Number—August, 1931.) Octavo of 211 pages with 74 illustrations. Per clinic year, February, 1931, to December, 1931. Paper, $12.00; Cloth, $16.00 net. Philadelphia and London: W. B. Saunders Company, 1931.

THE SURGICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 11, No. 5. (Pacific Coast Surgical Association Number—October, 1931.) 279 pages with 109 illustrations. Per Clinic year (February, 1931, to December, 1931.) Paper, $12.00; Cloth, $16.00 net. Philadelphia and London: W. B. Saunders Company, 1931.

GONORRHEA IN THE MALE AND FEMALE. By Percy S. Pelouze, M.D., Associate in Urology and Assistant Genito-Urinary Surgeon at the University of Pennsylvania; Fellow of the Philadelphia College of Physicians, Philadelphia, Pa. Second Edition, Revised. 440 pages with 92 illustrations. Philadelphia and London: W. B. Saunders Company, 1931. Cloth, $5.50 net.

The second edition of this worthy book has reached us. The part in relation to Gonorrhea in the Male is not much changed. Part one of this division is given over to diagnosis and treatment in a very interesting didactic manner. Part two is a narration and analysis of forty-eight case histories. These latter lack the humdrum of the usual case history telling but have a very definite lesson with suggestive treatment appended. Part three constitutes the management of Gonorrhea in the Female. The whole book of 340 pages is interestingly compiled and holds the attention of the reader. The cuts and diagrams are well shown, while the print and paper are the usual good type of this Company.

H. W. Y.

MAYO CLINIC MONOGRAPHS—PROCTOSCOPIC EXAMINATION AND TREATMENT OF HEMORRHOIDS AND ANAL PRURITUS. By Louis A. Buis, B.A., M.D., F.A.C.S. Section on Proctology The Mayo Clinic, Rochester, Minnesota, and Associate Professor of Surgery The Mayo Foundation, University of Minnesota. pp. 178 with 72 illustrations. Philadelphia and London: W. B. Saunders Company, 1931. Price $3.50.

This little monograph undoubtedly will find a place in the library of many physicians. It is timely and fills the need for a small book devoting most of its attention to diagnostic methods and the treatment of two of the ano-rectal diseases most frequently met with. The author describes, in his own words, his own way of handling these patients. In the chapters on examination more detailed methods of examination rather than so many illustrations of instruments and apparatus would have made it even more valuable. The figures 7, 9 and 10 illustrating the positions suitable for proctologic examination are somewhat in conflict. This, however, does not detract from the many other interesting and valuable points in this little monograph.

L. J. H.

THE NURSE'S MEDICAL LEXICON. For the use of graduate and student nurses, of premedical and dental students, and of the general public. By Thomas Lathrop Stedman, A.M., M.D. Editor of the "Twentieth Century Practice of Medicine," of the "Reference Handbook of the Medical Sciences," and of "A Practical Medical Dictionary"; formerly editor of the "Medical Record." New York: William Wood and Company. Price, $2.00.

The medical profession has been familiar for a long time with Stedman's Practical Medical Dictionary. The larger work is standard and possesses so many desirable features that we can safely predict a demand for this smaller volume of 629 pages written for a class who prefer a shorter, more compact work. The Nurse's Medical Lexicon is attractively gotten up and is priced within the reach of everyone. We unhesitatingly recommend the work to those who prefer an abridged medical dictionary by a master lexicographer.

## WILL THE PHYSICIAN PRESCRIBE THE DIET?

John Albert Marshall, San Francisco, believes that the diets that cause various degrees of hypoplasia of the teeth are those in which any one of several factors may be altered. Of these, among the most important seem to be the vitamins and the relation of the vitamins to various mineral constituents in the diet, notably calcium and phosphorus. It would seem that a useful method of applying the present knowledge of dietary research would be for the dentist to secure more cordial coöperation with the patient and the physician. Unfortunately, however, there are too many instances wherein this coöperation either is not sought by the dentist or is refused by either the patient or the physician. The latter situation deserves a free and open discussion in the hope that a solution of the problem may be reached. Until this point is attained, the dentist is thrown, so to speak, on his own resources and perforce must designate, at least in a general way, those changes in the diet which a study of the case seems to indicate. Recommendations on choice of food are frequently necessary and may be made by the dentist without assuming any responsibility. Any further instructions should be left to the medically trained man. Dietary prescription is a different matter. It is based on a careful study by the physician of many data, gathered both by laboratory and by clinical methods. The interpretation of these data and their application is the duty of the physician rather than of the dentist. But the clinical application of these facts becomes the joint duty of dentist and physician.—*Journal A. M. A.*

## DIPHTHERIA TOXOID (DIPHTHERIA ANATOXIN-RAMON) IN INFANCY

Joseph Greengard, Chicago, vaccinated 117 infants, ranging in age from 4 days to 2 years, against diphtheria with two 1 c.c. doses of commercial diphtheria toxoid. Complete immunity, as measured by the Schick test, was obtained in 98 per cent of the infants. The appearance of immunity was quite rapid, a considerable proportion showing a negative Schick reaction two weeks after the second injection. Reactions were noted in only 2 of 147 cases; both of these were very mild. In a small group in whom the persistence of immunity was tested, one case occurred in which the Schick reaction turned positive six months after vaccination. Three cases of clinical diphtheria occurred during the period of investigation. One of these appeared in a vaccinated child with a succeeding negative Schick reaction. On the basis of his observations the author concludes that immunization against diphtheria, as measured by the Schick test, can be produced rapidly and safely in a high proportion of infants by the use of two 1 c.c. injections of diphtheria toxoid.—*Journal A. M. A.*

# THE JOURNAL

OF THE

## *Michigan State Medical Society*

ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL


# Minutes

of the

# Joint Session of the Legislature of the State of Michigan

Convened at 4:00 P. M., April 14, 1931

TO HONOR

Frederick G. Novy, M.D.
Moses Gomberg, Sc.D.
Reuben L. Kahn, M.D.


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## INTRODUCTION

Pursuant to a resolution introduced in the Senate by Senator J. H. Upjohn, and concurred in by the House, the Senate and the House met in joint session on April 14, 1931. The minutes of that joint session are here recorded and are published as a permanent record in order that this unusual tribute to distinguished scientists may be preserved.

# Minutes of the Joint Session of the Legislature of the State of Michigan

CHAMBER OF HOUSE OF REPRESENTATIVES

April 14, 1931

4:00 P. M.

*Lieut. Governor Dickinson:* We will now come to order and listen to the invocation by the Reverend Edwin W. Bishop, Pastor of the Plymouth Congregational Church of Lansing.

Reverend Bishop: Oh God, Thou Great Heart and Center of the Universe, Supreme Intelligence, Thou hast been, through the ages, rolling fire mists into planets and unrolling into law and order primitive chaos, and it is fitting that we stand before Thee and pause for a moment in respect and honor of Thy ever-working Intelligence.

And we believe that it is fitting and proper that we should honor as men who think Thy thoughts after Thee and do Thy deeds after Thee, every patient historian, every delegation of scientists, every constructive chemist, every artisan that labors honestly at his task, every one who gives birth to new thoughts, and we believe that as we meet here in this center of government for this purpose this afternoon in honor of the sons of Michigan who have here accomplished something, that we will do well to make their lives originate and establish these torches of inspiration that give fire, Divine fire, from personality to personality. We believe that this will make our State great, and that what shall make our State greater is not its copper or its woods, but its men, Divinely inspired men who work after Thee.

Lives of great men all remind us
We can make our lives sublime,
And, departing, leave behind us,
Footprints on the sands of Time.

In the name of the great working, ceaselessly benevolent Creator, Amen.

*Lieut. Governor Dickinson:* The Secretary of the Senate will call the roll.

*Secretary of the Senate Chase:* Mr. President,, Twenty-nine senators are present, a quorum.

*Speaker Pro Tem Dacey:* The clerk will call the roll of the House.

*Clerk of the House Gray:* Mr. Speaker, ninety-three members of the House are present, a quorum.

Mr. Watson moves that a special committee, consisting of two Representatives and one Senator be appointed to invite and escort the Justices of the Supreme Court to the joint convention.

*Lieut. Governor Dickinson:* The question is on the adoption of the Resolution; all those in favor will signify by saying aye.

Unanimously carried.

*Lieut. Governor Dickinson:* I shall appoint on that committee Representatives Watson and Campbell, and Senator Horton.

*Clerk of the House Gray:* Mr. Culver moves that a special committee consisting of two representatives and one senator be appointed to invite the State Officers to be present at the joint convention.

*Lieut. Governor Dickinson:* The question is on the adoption of the Resolution: All those in favor will signify by saying aye.

Unanimously carried.

*Clerk of the House Gray:* The President of the joint convention names upon such committee Representatives Culver and Osborn and Senator Campbell.

*Secretary of the Senate Chase:* Senator Bonine moves that a special committee consisting of two senators and three representatives be appointed to escort the Governor and his guests to the convention.

*Lieut. Governor Dickinson:* The question is on the adoption of the Resolution; all those in favor will signify by saying aye.

Unanimously carried.

*Secretary of the Senate Chase:* The President of the joint convention names on such committee Senators Bonine and Rushton, and Representatives Frey, Read and McEachron.

*Lieut. Governor Dickinson:* The committees will perform their duties.

Arrival of State Officers at 4:18 P. M.

Arrival of the Members of the State Supreme Court at 4:20 P. M.

Arrival of the Governor and his Guests at 4:23 P. M.

*Lieut. Governor Dickinson:* Governor Brucker will announce the purpose of the convention and call upon the guests to appear before you.

GOVERNOR BRUCKER

*Hon. Wilber M. Brucker:* Lieutenant Governor Dickinson, Mr. Speaker, Members of the House and Senate, Distinguished Guests, and Ladies and Gentlemen:

About two months ago, Dr. Upjohn of Kalamazoo, a Member of the Senate, first suggested that it would be altogether fitting and proper that a joint convention of the House and Senate be called for the purpose of honoring, at that time, some of the scientists of Michigan who had contributed largely to their day and generation.

The idea immediately bore fruit, gained ground and became extremely popular; members of the House and Senate, in large numbers, expressed their approval, and spontaneously this grew in the House and Senate until the executive office was approached on the matter and approval was readily given.

The meeting today is a result of that germ of an idea to honor scientists, and the purpose of this joint convention is to make incarnate, to make the personality of these men here who are the three honored guests today, who are the personification of science honored high as Michigan's contribution and our honor to them is in this convention and the tribute we pay.

The guests who are here are many. Those who have seen fit to honor this legislature and the rest of us public-spirited persons from outside are, some of them, grouped on the platform; others are grouped around

in front; others in the balconies and other places in the building are interested, likewise, in this ceremony.

I take the liberty at this time to present a few of them at random. I shall not, of course, be expected to call on all, except to have them rise and be known.

Mr. Henry Ford, of Dearborn, Michigan. (Applause.) Mr. Ford confidentially communicated, just a few moments ago, before we came in, something, of course, which he does not wish anybody to know, as that would be advertising to do it—that he personally drove off the twenty-millionth car this morning. Is that right, Mr. Ford?

*Mr. Henry Ford:* Yes, Your Excellency.

*Governor Brucker:* In addition to those who are to be introduced rather formally for a few remarks, there are members here from the staff of the University of Michigan and their wives and friends, and they are seated around in front here with the Regents.

I wish to present at this time Regent Cram. (Applause.)

Regent Sawyer. (Applause.)

Regent Beal. (Applause.)

There are also here present from the University Doctor Haynes (applause); Mrs. Novy, wife of Dr. Novy (applause); Coach Hurry-Up Yost (applause); Dr. Bruce (applause); Shirley Smith (applause); Dr. Yocum (applause); and if I have overlooked any in the group from the University, they shall be presented in just a moment.

I have overlooked Dr. Huber (applause); also, Mrs. Kahn, wife or Dr. Kahn, who is here (applause); and the two little Kahnnettes (applause).

In ancient days there were plenty of the elder and younger. This is Dr. Novy, the younger (applause); Mrs. Gomberg (applause).

Now I think the party which is composed of those in addition to the State Officers, Members of the Supreme Court and others gathered around here at the invitation of the House and Senate, is complete.

The purpose of this gathering having been made known in the sense that this is to honor science in the person of three eminent scientists, I shall take the liberty at this time to introduce to you the President of the University of Michigan for an address—Dr. Alexander Ruthven. (Applause.)

PRESIDENT RUTHVEN

*Dr. Alexander Ruthven:* It is customary to think of Universities as places of instruction. This conception, as many educators realize, is incomplete. These institutions, it should never be forgotten, have two major objectives—one the instruction of our youth; the second, investigation or research. In other words, the increase of knowledge. We sometimes shorten that and say that Universities have two objectives, or the diffusion of knowledge and the increase of knowledge.

Knowledge is increased, as I have said, by research, which means simply investigation, study, the search for facts, principles and relationships.

Researches in Universities are usually carried on without any thought of material reward for the investigator. However, they generally contribute, ultimately at least, to the health, comfort and happiness of humanity.

Mr. Ford's automobile, in this case; antitoxin, electric lights, radio, ice machines and those other accessories of civilization are the product of research.

Not only is investigation being carried on in Universities, as we very readily understand, but a considerable amount is being done in these institutions and the amount which is being carried on in the higher schools is increasing both actually and proportionately. The University is not only doing much for humanity in its shops, hospitals, laboratories and museums, but it is one of the great schools which believes in making the results of the study of its scholars available to the people of the State just as soon as possible.

As evidence of this desire to be of service to the commonwealth, I might site institutes for research being built up on the campus: The Bureau of Business Research, Bureau of Forestry Research, Bureau of Fisheries Research, Simpson Memorial Hospital; but in addition to these units almost every department is making contributions of direct or indirect benefit to our citizens of the state.

Today, I am presenting to you one of your intellectual giants. He is typical of a group of modest, earnest public servants

whom the world has acknowledged but who has only asked that he be allowed to work quietly with all of his talents for the good of society.

I might introduce this man by giving some account of what he has done, but this would take too long. I might introduce him in a more formal way, as a Bachelor of Science of the University of Michigan, 1886; Master of Science, 1887; Doctor of Science in 1890; Doctor of Medicine, 1891; Doctor of Laws of the University of Cincinnati, 1920; a special student at the Hygienic Institute in Berlin in 1888; at the Pathological Institute at Prague in 1894; at the Pasteur Institute in Paris in 1897.

Assistant in Organic Chemistry, University of Michigan, 1886-87; Instructor of Hygiene and Physiological Chemistry, 1887-1891; Assistant Professor, 1891-93; Junior Professor, 1893-1902; Professor of Bacteriology, 1902- ; Director of the Hygienic Laboratory 1909; Director of Pre-Clinical Medicine and Chairman of the Executive Committee of the Medical School from 1930.

A man prominently associated with the establishment of the first laboratory for water analysis in this State, which brought about pure water supply for the people and with the establishment of the first Pasteur Institute in this country for the treatment of rabies; a member of the State Board of Health for many years, during which time there were drafted the existing laws governing public health in the State which have been a model for the country; a member of the United States Commission to investigate Bubonic Plague in California in 1901, and the National Research Council; Honorary President of the Hygiene Section of International Medical Congress, Moscow, 1897; Vice President of the Pathological Section of the International Tuberculosis Congress in 1908; Vice President of the Tropical Medicine Section of the International Hygiene Congress, 1921; a member of the National Academy of Sciences; Vice President in 1910 of the American Association for the Advancement of Science; President, 1904, of the Bacteriologists Society; a member of the Physiology Society; a member of the Society for Experimental Society of American Physicians; Council member of the Division of Pharmacology and Chemistry of the American Medical Association; a member of the Society for Experimental Biology; a member of the Association of Pathology and Bacteriology; the Society of Biological Chemistry, and the Society of Pharmacology; President, 1924, of the Association of Immunology; President, 1910, of the Michigan Academy of Science, Arts and Letters; Vice President, 1898, of the Michigan Medical Society; Honorary Member of the Philadelphia Pathological Society and the Harvey Society; Associate Member of the Societe de pathologie exotique, Paris; Associate Member of the Societe royale des sciences medicales et naturelles, Bruxelles; Corresponding Member of the Societe de Biologie, Paris; Chevalier, Legion de Honneur.

Gentlemen, I have the honor to present to you, Dr. Frederick G. Novy. (Applause.)

DR. NOVY

*Dr. Frederick G. Novy:* Gentlemen and Ladies: I need hardly to say that an occasion like this is one that is rather trying for the individual. I was told that we were to meet with the legislature—I imagined the legislature to be somewhat after the fashion that it used to be in the old days, a small room where we might get together, but I am somewhat nonplussed and surprised to find that this great hall is so filled and overflowing.

I have been told to say something about research. It is not possible to convey very much of an idea as to what that word means. A scientist may be engaged in his daily job; he may be looking after an item that seems to be very uniform in the average individual, but it is something that he has a vital interest in on which he devotes all his time and thought, perhaps to the neglect of his family.

In scientific work, research work, the things that are done and accomplished as a rule do not appear before the public eye in the way that the achievements of applied science in industry appear.

It is within the memory of most of you that are here, the appearance of the telephone and the phonograph; the appearance of a dynamo and electricity; the appearance of the automobile, the airplane, the movie and the talkie and the radio, television at the moment. Those are things which crystallize before the eye, before the touch and before the hearing, but that is not always

the case with scientific work, which is carried on and has to be carried on in the seclusion of laboratories, away from the hum and noise and agitation that comes from other things.

I might recall how Benjamin Franklin, standing in the garden of his home in *Passail,* outside of Paris, witnessed the first balloon ascend. At that time some one remarked to him: "Of what use is that thing," and his answer, well known to many of you, was: "What use is a new-born child?" Time can only tell and so it has been the story written high and large regarding scientific work.

Not so many years ago, Pasteur was busy studying the germs causing fermentations. Anyone could have approached him then and said: "Of what use is it to study this little organism that you find under your microscope?" I can well conceive a shrug of the shoulders and a brief response: "Wait and see," and it was not many years perhaps that was realized.

A young Scotch surgeon saw through the work that was being carried on in the Latin quarter of Paris; he saw something that was of significance to him, and that Scottish man *Lister* introduced the first attempt in which man tried to avoid some of the evil consequences that were bound to occur in surgical work, that had always been with the surgeon. He introduced the procedure then known as *antiseptic* surgery, a procedure ridiculed by all his associates and he, himself, all but ostracised because he departed from the traditional methods that had been taught and carried from time immemorial, but the wheels were moving along and it was not before long when antiseptic surgery, the old-fashioned kind, gave way to modern *aseptic* surgery and as a result of that, whether everyone knows it or not, the fact is that the surgeon today can carry on work that was absolutely impossible before the days of those early studies of Pasteur on fermentation. Those two men have earned the undying gratitude of all mankind.

While Bell was perfecting the first steps in the telephone of today, Pasteur and *Koch* were carrying on investigations of the organisms causing disease. One by one the causes of disease have been revealed in these last forty or fifty years. We can mention tuberculosis, leprosy, typhoid fever, chorea, dysentery, pneumonia, meningitis and a score of other diseases—one by one, they have been forced to yield up their secret. The shackles of ignorance which held man from the very birth date of his existence were shattered when these causes of disease were recognized; for the first time, man was able to institute proceedings tending to prevent and tending to cure the diseases of man and animal.

The result of research—it is not still of a spectacular kind, but of the quiet kind but, one by one, these diseases have yielded up their secrets. It is a long way before the end will be reached; much work remains to be done.

It will be fifty years next month when, in an open field outside of Paris, a public demonstration was carried out on the vaccination against anthrax. Pasteur had labored and worked out the research side of that matter; he knew what he would get but such was the attitude of the mass of the people, of all those who claimed to know anything about it, that he had to produce a public demonstration, and there were gathered skeptics and what not—anything but a sympathetic audience—and there was performed one of the first crucial experiments that should be known and carried on through time to come because it opened up a bigger aspect for the prevention of human diseases and suffering. In that particular experiment, twenty-five sheep were inoculated with vaccine that he had prepared, and a few weeks later these same animals were reinoculated with the virulent organism and, at the same time, an equal number of animals were inoculated with the same virulent organism as a control, as we call it. An experiment that is not controlled is absolutely worthless, and one of the hardest and most difficult things that a teacher can convey to anyone is the necessity of over-riding his own impulses, his own desires and his own wishes and to make the experiment a controlled one which will leave no question about the outcome and so in that historical experiment at *Milan* these animals were inoculated with virulent organism and within a few days the controlled animals, the inoculated animals, died off, and not one of the others showed the slightest effect—the first time in the history of man, for we accepted vaccination when man showed his ability to conquer disease that had been ex-

isting and threatening mankind from the beginning of history.

Two or three years later, Pasteur extended his research to the study of human diseases, and he selected one that was of the dread variety because there is nothing more that repels man than the disease of hydrophobia, and here applied the same principles which he found held true of previous work. He was able to go through similar tests and show the prevention of disease was possible and so things moved. One after another, came the discovery of vaccination for this and that disease.

In the late war, four million men were under arms and yet, in spite of that enormous aggregation of men, typhoid fever was practically negligible in the army. Had it not been for the vaccination procedure which was developed ten years before that, it is quite certain that America would have paid sacrifices similar to those which occurred during the Spanish war.

It was my good fortune, in 1894, to be present at an international congress at Budapest when a disciple of Pasteur presented the results of his work on the treatment of diphtheria. He had previously worked out the existence, the production, of a poison by that germ. The workers in Germany had discovered antitoxin, but it remained for Rue to apply on a new or old scale that remedy to the treatment of that disease in children.

At that meeting, at which scientific men from all parts of the world were gathered, you can readily imagine the enthusiasm, the acclaim which came when here, for the first time in the history of man, a disease like diphtheria was shown to be controllable, to be curable, as a matter of fact, and, since that time, research has been carried in this and that direction so that we have many diseases that are very effectively controlled—but I must not dwell entirely on the aspect as presented by pure bacteriology.

There is another aspect which I would like to call your attention to and that is this: it was supposed and believed that bacteria caused disease by contact; by being taken in water and the like. It never dawned until the right time came that there was another mode by which organisms could enter the body. Forty years ago, Smith in this country, by painstaking research, demonstrated that Texas fever in cattle was transmitted through the bites of ticks. That was something that had never been dreamed of before; that an insect could be responsible for a disease. It was so unusual that the scientists of Europe simply considered it an American way of pulling the wool, but it was not more than a half-dozen years, when the work of Ross in India showed that the malarial organism carried on its whole life history in the mosquito and that malaria could not be contracted except through the bites of mosquitoes.

And then came our own contribution in this country when, after the Spanish war, an army commission, with Walter Reed at the head, investigated yellow fever and showed that it was due exclusively to the bite of an infected mosquito.

The United States went down to Panama—they proceeded to dig; they put officers in charge of sanitary measures. Malaria and yellow fever were promptly held in check, and I may say, since 1906, the first year of occupation by the American workers in the Isthmus, there has not been a single case of yellow fever in one of the worst yellow fever spots of the world as it had been before. Research had wiped out one of the deadliest foes of the warm countries and it is because of this conquest that the United States succeeded where France had failed, by controlling the insect carriers of those diseases.

There is just one more aspect to which I wish to call attention very briefly, and that is in medical science, research work in medicine, it is necessary to utilize all the forces of the sciences proper that are available. For that reason, medical science, the practice of medicine, rests upon anatomy, histology and embryology; it rests upon bacteriological chemistry, pharmacology, pathology, bacteriology, and, so on, each and every one of those sciences is a contributary to the sum total of human knowledge and medicine profits by utilizing such work.

In 1887, the legislature of Michigan appropriated a modest sum of money for the establishment of the first hygienic laboratory in the United States. I take this occasion, particularly, to express my appreciation of that fact. It is the first institution, as I have said, of this kind. The idea was that of Dr. Vaughan, who at that time was a member of the State Board of Health, and it is significant that the reasons for the

establishment of that scientific laboratory were put down, first, research into the causation of disease; second, examination of waters and other materials to aid in the diagnosis of disease, and, third, that of teaching. Research was given the first prominent position. The University has endeavored to live up to that proposition. It will always hold that as its first objective.

The framers of an ordinance of one hundred thirty-odd years ago, under which the northwest territory was organized, inserted in that document words to this effect: that schools and means of education shall forever be encouraged. They did not think altogether in terms of the little red brick school house. They had their ideas and could see and vision that another era was coming.

I am happy to think that, in many ways, this has come about. I have taken up too much of your time. I want to express again my very sincere appreciation for the courtesies that you have shown me. I thank you. (Applause.)

*Dr. Ruthven:* It is my very great pleasure to present to you, first, my very dear friend and associate for many years—we have grown up side by side, as it were, in the University. His work has been along different lines from what mine has been, but he has accomplished vastly more than is possible to mention or say anything about. I am sure he would not want me to say too much, because I know there is not another man who has more modesty than my friend has, but I wish simply to say this: that if you were to take a census of the chemists in this country, you would find that his name is in the front ranks. He has been honored as the recipient of the Nicholls medal of the Chemical Society, and of that, the rarest of medals, the Willard Gibbs medal and, still more, he has received the unusual and extraordinary honor of being the President of the American Chemical Society, one of the largest scientific bodies in the world, Professor of Organic Chemistry, and Director of the Chemical Laboratory in the University. I therefore take very great pleasure in presenting to you at this time Dr. Moses Gomberg. (Applause.)

DR. GOMBERG

*Dr. Moses Gomberg:* I have very little to add to the benefits of research that have come to all of humanity. It is a privilege any one of us teachers have that we can, in addition to our daily duties, take at least a little time to assist the authorities of the University. Of course it means by the grace of the State authorities that we have the privilege to carry on this independent research work.

I take this opportunity to express my own great obligation to the University and to the State that supports the University. (Applause.)

*Dr. Ruthven:* As you know, some twelve years ago, the Department of Health in this State was reorganized—the old State Board of Health went out of commission and its place was taken by what is known as the State Department of Health today. One of the first duties that was placed before this new venture was the establishment of laboratories in which diagnosis could be made for the people of the State. It was necessary to have the very best man to start the operation—to conduct it and also to work along separate lines of research, and it is one of the great pleasures that I have of stating here to you that the State Department of Health, with the right view in mind, selected one of the representatives to go to New York, to look about elsewhere for a man that would be especially fitted for this task. How well Dr. Young accomplished his task it is hardly necessary for me to say, but it was he who brought to Lansing Dr. Reuben Kahn and from that day, now ten or eleven years ago, Dr. Kahn has been right here working in the State laboratory, and it is a source of especial pride to you of the legislature, to you of the City of Lansing, and to those of the State of Michigan, that Dr. Kahn was able to carry on, with laboratory assistants—to carry on the investigations which resulted in his perfection of a test—diagnostic test—which has received the approbation of the world.

It is a matter of only three years since he was called under the auspices of the World League to go to Copenhagen and, along with fourteen other men, to submit their special tests to a comparative experiment to find out what they had worked out—what results they gave. In that test it was found that his test was of the very best and, similarly, last year, he was called to Montevideo, where, again, a body of eleven

men, with different methods, compared their results, and he again gained the supremacy test of the best.

I have the very great pleasure of presenting to you at this time, Dr. Reuben L. Kahn, Director of the Hospital Laboratory at Ann Arbor. (Applause.)

DR. KAHN

*Dr. Reuben L. Kahn:* I wish to thank you for this honor conferred upon me. I wish to thank you very much. (Applause.)

GOVERNOR BRUCKER

*Governor Brucker:* Very modestly done, Doctor. Ladies and gentlemen, the last order of business on the program laid out on the joint convention of the legislature is that of a tribute by the Executive to the three personages we honor today.

I presume that words on my part are entirely superfluous at this hour, when we have seen and heard from these eminent scientists themselves. I presume it is not necessary to have any ceremony to honor these men who have become so well known in the field of science. I presume never in the history of the legislature of this State has pause been taken for the purpose of stopping the legislative machinery during the last few weeks of its session when it is so busy, to pay this tribute of respect to anyone other than a member of the State government directly. One might say almost a governmental function connected with the University of Michigan, but not connected with the legislative or executive branches of government and so there is something peculiar about this event that caused the pause which the legislature directed should be done, and that I think is the fact that regardless of the busy bustle of today, we do have time to recognize these things that are quietly done, that are accomplishments of progress without all the spectacular drama, all the noise and flamboyancy of brass bands, but for the quiet industry who accomplish the things of the world.

I think there is something fine and splendid about the presence of these gentlemen. They represent in stature perhaps the antithesis of science; they represent in science somewhat of a diversity, but they represent the personage of the men who come here to honor them; it groups together not only science and art but industrial genius, and so we pause — we of Michigan — a few moments, officially or otherwise, to pay this tribute of respect.

Today I would speak on the thought, in tribute to them, of the relationship of government and science. Science deals with exactness; it deals with precision, with accuracy. It deals with the things that are certain and definite; it deals with the things that are known and susceptible of important interpretation. It demonstrates itself through such instruments as the yard scale, the slide rule, measuring rod, arithmetical and geometrical formulas, and those things which are precise to a nicety and exact; which have boundary and limitation, which are circumscribed so the knowledge knows certain boundaries with which it is encompassed and beyond which man cannot go.

Government, on the other hand, is just the opposite. Comparable with science it might be said in an analysis of those two, Government is the inexact, the unprecise, the speculative, problematical, theoretical; it deals largely with perspective and with the personality of individuals; with the reaction on human nature and with such things as idealism, sometimes practical, sometimes impractical; with the enthusiasm, effort, and with things boundless in their scope without any limitation whatsoever, which are not susceptible of known knowledge but which, after all, must be a definite relationship called Science.

These things have gone together down through the ages. Science owes a deep debt of gratitude to Government. I did not reverse—I shall in a moment—but Science owes a deep debt of gratitude to the Government itself. In the early days before there was such a thing as a strong, central government, there was no such thing as a growth or progress in science. In those countries where a strong and stable government—in the days of antiquity—grew up, bossed by the mail fist or what not, government became so strong that anarchy was put aside and science was permitted to go forward and that all depended upon government while its people kept law and order, so the forerunner to science was government. It was the thing that sanctified the peoples to a degree and after that, after it was understood and settled, along came science but not before.

Science owes a good deal to government for its development in the amounts which have been appropriated from tax moneys in the days gone by to make possible the things, the laboratories, the hospitals, the places of clinical fame and so on. Government has been the basis of all that, and the stronger the government, the better able to cope with the questions of the day, the more this history shows did Science flourish.

But let us reverse this today. We are met to honor Science more than Government today. Government owes a debt of gratitude to Science that it can never fully repay. Science has made possible the growth, the development of happiness, health and welfare.

If government is firm for the purpose of mutual association, mutual benefit, for the sanctity and safety of our lives and all the rest, then the thing that has developed that more than all the rest has been the development in the field in the realm of Science itself. Science has made possible the growth of such projects as the Isthmus of Panama Canal, joining the two continents, or separating them, with that stream of water. Science has made possible all of that. As we have heard today in just a word from Dr. Novy, science has made possible the elimination of yellow fever. Science has made possible the prosecution of successful warfare in bringing about the immediate conclusion a great war such as the World war, once the troops got into action.

Science has contributed in so many ways, in both war and peace, that it ill becomes me today to dwell at length upon it. May I say just a word about the relationship of Science and Government? Hand in hand they have gone through the centuries and it is quite fitting and proper today that Science should bow its head to the blessings of Government, and Government should bow its head in recognition of the blessings of Science.

It has been said that specialization is the cry of today. I think it was Disraeli who said: "Constancy of purpose is the secret of success." If that be the case, certainly these gentlemen who are living examples of science today, tested by that yard-stick, show that there has been a constancy of specialization.

There are virtues and certain things that the government are not always appreciative of. Specialization resolves itself sometimes in isolation from the beautiful things of life to get into the groove or rut of one's own work. Nobody appreciates here today, certainly not the layman—I say nobody appreciates what Doctors Novy, Kahn and Gomberg have gone through, day after day, enthused and thrilled in what, going on until they have actually achieved success in isolating the germ and winning them fame in their chosen field.

What a special thing it must be to these men today to feel that a state as large as this State can pause its machinery in government, as it has done, to recognize that thing, recognize the toil that has been given for so many years in this thankless field of science; thankless for so many reasons, because no one of these men have commercialized upon their discoveries but have been willing to give them to humanity for the purpose of serving their fellowman. So you have exemplified in your industry and in your lives in the field of Science, gentlemen, the three things which are the indefinite paradoxical things in government but have brought very definite rewards of science. Your industry, your perspective; there was something in the pursuit of your business and the enthusiasm of the purpose with which you undertook it.

It is said that President Hoover, he and Mrs. Hoover years ago, wanted to get everything he could in engineering—get the last word of it. After exhaustive reading in the English tongue, finally found a Latin book on Ancient Engineering. Mr. and Mrs. Hoover sat down and read that book all the way through to find some little word that might be old, but new because of its present application. If that be so, may we not say that if any one of us were in the field of exactness and preciseness of science, in that field in which the exact quantity is known and the unknown is known to the extent at least, we should be happy, indeed, were we to have followed the gleam with such clear vision, with such persistence as to have the honor conferred on you, and I feel the time is opportune to have the records of these men read and I shall proceed to do so. Dr. Novy's record has been read somewhat at length, and of the other two I take the liberty to read this very concise statement.

(Reading) "Dr. Moses Gomberg, born in

Russia and received early education there. Entered the University of Michigan as freshman in 1886 and received B.S.U. of 1890; received D.S., 1894; Professor of Chemistry since 1904 at U. of M., although instructor since 1890. More than two thousand students have received instruction in organic chemistry from him.

During war worked on gas warfare under Chemical Warfare Service. Was commissioned Major in Ordinance Department. Was technical adviser in manufacture of smokeless powder and high explosives.

Discovered the elusive triphenyl-methyl and trivalent carbon.

Was awarded Nichols' Medal by American Chemical Society, 1914; Willard Gibbs' Medal, 1925, and Chandler Medal, 1927."

"Dr. Reuben L. Kahn, born in Lithuania in 1887. Studied at Columbia and Yale. Obtained D.Sc. degree, New York University. Has made one of most valuable contributions to science in the annals of modern medicine, the 'Kahn Test,' for syphilis. Has demonstrated test in most important health centers of the world and by invitation before League of Nations Health Committee. Later found Kahn test superior to all other methods, including the older Wassermann test, which had been standard in the past. Dr. Kahn's simpler, shorter and more accurate test now being put into general use throughout the world. Is Director Clinical Laboratories of the University Hospital and Assistant Professor of Bacteriology and Serology at University of Michigan. Was formerly immunologist with Michigan Department of Health."

Right over here at this State Office Building, within a block and a half, in the State Board of Health laboratories, was where this test was actually discovered, and applied by Dr. Kahn, contributing this time, not only as a time-server, not only as one who draws his check, but a man who had given his zeal and life in State service, typical today of a man who graduated from that, taken to the University of Michigan and is now employed in the clinical laboratories there, engaged on a test, I am informed by doctors, which, if successful, will revolutionize one portion of the field of science with reference to the health of our people—a very important disease and one that has taken its tens of thousands annually. May the good, beneficent Almighty grant that benediction to him upon the work he is engaged in now, in order that he may come back to this legislative assembly hall some day with the thrill that will come to him as having succeeded and nothing more.

He was offered by a large drug firm in this State to sell his test and equipment, some of it, to them. He could have become rich and world famous by reason of it. He disdained it and said: "No, I shall go on with my work; I shall give it to the world and humanity," and he is a poor man and because of it, I think there is something genuine—I think we can well pause to pay this tribute.

In war time, when men are decorated on the field of honor, the regiment is drawn up and the band marches up and down. They are called out by the Commanding Officer of Expeditionary Forces and there, in the presence of all, they are decorated with a priceless jeweled diadem of honor with the Distinguished Service Cross of our country. Were this England in an occasion of this kind, the King and Parliament would be together and, in the presence of them, someone would be knighted and someone would receive the title of Sir or Lord or something of that kind, or a rank fitting the occasion. In America, we do not believe in that, but we do believe in giving the distinguished honor that comes in point of service by speech or the friendly shake of the hand or nod of the head, with an eventual space or niche in the Hall of Fame and other places where people devote their lives to science and so today we pay our tribute of respect, not with the legions lined up in front, not with the dipping of the State Colors, but to have our legislature rise in joint assembly; to have our Supreme Court here, who are interested in the grandeur of Michigan, and all those who understand the greatness of our State, and we, members of the Government, and all others, pause to offer our humble and sincere tribute to you and your work. May you go on and continue to receive the beneficent results of your splendid tests in laboratories and otherwise, for a people who are appreciative, regardless of what is said to the contrary at times.

Won't you believe me, the Members of the House and Senate, Members of the Supreme Court and the Executive of the State, pause at this moment to give you this tribute of respect. (Applause.)

*Lieut. Governor Dickinson:* I cannot believe that there are many in this audience who would be satisfied, after all that has been said here today, if they did not hear a few words from Mr. Henry Ford.

*Mr. Henry Ford* arose and bowed, his only remark to those assembled being: "I thank you very much."

RESOLUTION

*Secretary of the Senate Chase:* The Senator from the Twenty-Fifth District, Mr. Lawson, offers the following joint resolution:

"A Joint Convention Resolution honoring and commending Dr. Frederick G. Novy for a distinguished life of service to science, which has brought distinction not only to himself but to the University and the State which he has served.

WHEREAS, Dr. Frederick G. Novy, a resident of the State of Michigan and Professor of Bacteriology in our State University, is an outstanding teacher and leader in his field, and

WHEREAS, Dr. Novy has devoted his entire life to medical research and to the teaching of medical science, and

WHEREAS, He established the first bacteriological department in any higher institution of learning in this country, and

WHEREAS, His efforts have been crowned with splendid results that have brought him an international reputation and the acknowledgment and respect of his colleagues throughout the world, and

WHEREAS, His achievements have redounded to the credit of the State University and the State of Michigan, now, therefore, be it

RESOLVED, That we, the members of the Senate and House of Representatives of the State of Michigan, in joint convention assembled, express the gratitude of the people of Michigan for the outstanding life of service which Dr. Novy has given to the State and to medical science, and be it further

RESOLVED, That these resolutions be spread upon the journal of the House of Representatives, and an engrossed copy thereof be presented to Dr. Novy."

*Lieut. Governor Dickinson:* The question is upon the adoption of the Resolution. All those in favor will signify by saying aye.

Unanimously carried.

*Clerk of the House Gray:* Representative Reed offers the following joint resolution:

"A joint Convention Resolution honoring and commending Dr. Moses Gomberg for his great contributions to chemical science.

WHEREAS, Dr. Moses Gomberg has since 1899 been Professor of Chemistry in the University of Michigan, and since 1893 an esteemed and devoted teacher of chemistry in the University, and

WHEREAS, Dr. Gomberg has, through his researches, achieved a place of national and international distinction in his chosen field, and

WHEREAS, Through the wide recognition of his attainments he has brought honor not only to himself but to the University and to the State which he has served, and

WHEREAS, Through his teaching, influence and investigations, Dr. Gomberg has materially added to the advancement of modern chemical science, which has made itself felt in industry, public welfare, and the advancement of learning, now, therefore, be it

RESOLVED, That we, the members of the Senate and House of Representatives of the State of Michigan, in joint convention assembled, give expression to the appreciation the people of Michigan feel for the distinguished service to science, to the University and to our State which Dr. Gomberg has rendered, and be it further

RESOLVED, That these resolutions be spread upon the journal of the House of Representatives, and an engrossed copy thereof be presented to Dr. Gomberg."

*Lieut. Governor Dickinson:* The question is upon the adoption of the Resolution. All those in favor will signify by saying aye.

Unanimously carried.

*Secretary of the Senate Chase:* Senator Upjohn offers the following joint resolution:

"A joint Convention Resolution honoring and commending Dr. Reuben L. Kahn for distinguished medical research.

WHEREAS, Dr. Reuben L. Kahn, a resident of the State of Michigan, while a member of the staff of our noted State Department of Health and with the assistance of that department and with the support of distinguished members of the faculty of our renowned State University, Professors Frederick G. Novy and Udo J. Wile, developed a blood test of great value in the diag-

nosis of a grave social disease; a test of such world-wide importance that the Health Committee of the League of Nations saw fit to bring Dr. Kahn to Europe in 1928 and to South America in 1930, where, at specially designated conferences, his test was placed in open competition with other leading methods known to the world and was found to be far more reliable, economical and rapid than all the other methods, and

WHEREAS, The Kahn test was thus established and at present is employed throughout the world and its constant and universal use reflects the appreciation of mankind for this great work of Dr. Kahn and has brought credit and glory to him and honor and fame to the State of Michigan, and

WHEREAS, Dr. Kahn could have derived great pecuniary reward from his test by commercializing the reagent employed in it, but preferred to give it to humanity without the slightest profit to himself and is still giving his service to the people of our state and humanity through his labors as Director of the Laboratories of our eminent State University where he is associated with other scientific workers of the front rank, and

WHEREAS, It is hoped that Dr. Kahn may be able to continue the all-important work of research with the same high level of accomplishment that has characterized his efforts in the past, now, therefore, be it

RESOLVED, That we, the members of the Senate and House of Representatives of the State of Michigan, in joint convention assembled give expression to the pride we people of Michigan feel not only for the splendid accomplishments of Dr. Kahn, but also for the ideals which have motivated his endeavors and have caused him to accept, in satisfaction of his work, a knowledge of service to humanity rather than of material reward, and be it further

RESOLVED, That these resolutions be spread upon the journal of the House of Representatives, and an engrossed copy be presented to Dr. Kahn."

*Lieut. Governor Dickinson:* The question is upon the adoption of the Resolution. All those in favor will signify by saying aye.

Unanimously carried.

*Senator from the Fourth District:* I move that the joint convention at this time adjourn.

*Lieut. Governor Dickinson:* You have heard the motion of the Senator from the Fourth. All those in favor will signify by saying aye.

Unanimously carried.

(Adjourned at 6:15 P. M.)

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The Battle Creek Sanitarium has been conducted for more than 50 years as a chartered, self-supporting medical institution. Its purposes are purely philanthropic. Its chief objects are medical relief and race betterment.

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**Dept. 328**

**Battle Creek, Michigan**

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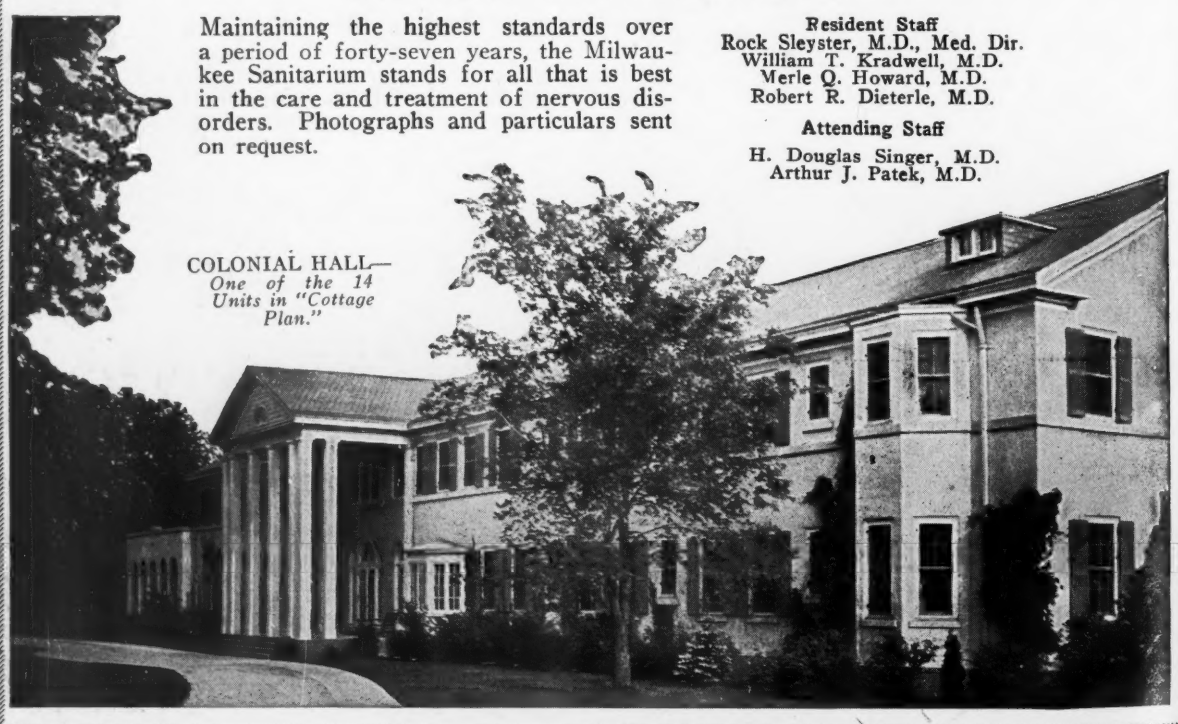

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